THE BUILDER

A Journal for the Architect & Constructor

APRIL 20, 1928 — No. 4446

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86TH YEAR

Design for Messrs. Fuller's Premises, Regent Street, W.: Interior of Shop.

Mr. Stanley H. Hamp, F.R.I.B.A. (Messrs. Collcutt & Hamp), Architect.

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXIV. No. 4446. APRIL 20, 1928.

OUR FUTURE ARCHITECTURE

A CERTAIN London daily paper has been giving its readers peeps at the metropolis in the year 1950—only twenty-two years hence—as seen through the eyes of certain eminent men. Considering the very short time that will elapse between now and that date, some really remarkable changes were predicted. All that can be said at this stage, in criticism, is that if all these things are to materialise by the year mentioned, the authorities and people concerned will have to show more energy and greater breadth of outlook, than ever shown before. Even then the results will not be so satisfactory as some of their promoters seem to think, and nobody will be any the worse off if some of these wonderful things do not happen.

Amongst the latter may be placed the proposals of one of the principal writers taking part in this symposium. Curiously enough, his ambition seemed to be, not to improve architecture, but to spoil the parks. London has a very precious heritage in the possession of its parks and open spaces. Some of these are in danger enough already, as witness the fate of Endsleigh Gardens and Mornington Crescent. By the way, one wonders whether the building line 50 ft. back from the street, about which there has been so much expensive litigation to win the right to, is being respected in the case of the former. There is an Act of Parliament, never yet repealed, stipulating this building line for the Euston Road. Yet there are now buildings just erected encroaching on this right. Here is work for those anxious for the amenities of the metroplis better than running motor roads through what bit of greensward is left to us.

While no such drastic changes can be expected as the various prophets referred to were able to foresee, there is a silent change taking place in the ideas of good design in every branch of our building and constructive activities. This has been brought about mainly by two great causes. Primarily, the great and overwhelming folly Europe recently indulged in has so affected us all by the impoverishment following in its train that we have had to study the most rigid economy in everything. This has resulted in our new buildings being for the most part severely plain.

Now for many decades previously, men with the true art instinct had been urging greater simplicity in design in every branch of original production, but all in vain. People had for so many generations looked upon added ornament as the only means of beautification that they could not realise that it was quite unnecessary. A time having arrived when all this was imperatively cut out by force of circumstances, people at last began to see that beauty did not depend upon it. Then the teaching of the purists began to be realised, and this is the second great cause and one most to be thankful for. Now it is widely realised that simplicity itself is an essential to true art. It is a curious thing that in all the immense amount of investigation nto, and examination of, the work of the ancients whi h for generations has been going on, the real truth about their greatest architectural achievements should be missed by so many students. During the Gothic revival every stone of our churches, cathedrals and monastic buildings was carefully examined, measured, drawn and set out by one or another searcher for the great and elusive "true medieval spirit." Yet few ever found it because they looked through the rosy spectacles of Art with a capital A rather than through the crystal ones of constructional necessity and utility. Most of them failed to see that many of the lesser buildings of the medieval period, which they admired equally with the more pretentious ones, were almost, and in many cases quite, devoid of ornamental features and additions.

To-day we realise all this, but it took a gigantic war to make us do so. So we come back to those great fundamental principles which our best teachers have for years been endeavouring to instil into us that art is not ornament, and ornament is not art. That simple and severe utilitarian objects mostly become beautiful in direct ratio to their powers to serve their purpose exactly. That the precise and exact suitability to their purpose of most objects is the supreme test of art. That added ornament cannot bestow this to anything. That the whole is greater than the part, and while the former may be constructed of portions, all these must be subservient to it and not dominate it. Beauty produced by simplicity is the result of knowledge aptly applied; crudeness is the vague expression of ignorance.

Having by our forced economy assimilated some of these things, we are now forging our way to a new conception of architecture which shall be the articulation of our requirements and the artistic definition of modern materials. It has been a good thing for us to be forced down to bare necessities, to start at the bottom of the ladder as it were, and to be obliged to climb upwards loaded with our new materials on our backs and to forge our way upwards with painful steps and slow. To put our architectural pattern books on the shelf and forget them. To think in terms of steel framing and reinforced concrete expressed in the strictest economy and to be thrown entirely on our own resources, whether beauty or crudeness results.

So here we are, doing crude and unlovely things at times, but still striving to reach the beautiful by other ways than of old, and with new materials. The question many are asking themselves at the present moment is "Shall we arrive?" Yes, if we ever look up and do not stop to gaze downwards; if we turn our eyes onward and do not meditate too much on the past. "Let the past bury its architecture and the dead keep their secrets," says a correspondent. "Ours are the same impulses that stirred them, but ours also are the new materials which they cannot help us to utilise to the best advantage because they never knew them.

If we seek not for them a new style, we may find it; if we do we shall lose it. Our task is to use these new materials as intelligently and sympathetically as the old masters did theirs and the style suitable for them will arrive. The menace to its arrival by the use of these materials lies in those old pattern books, those ancient traditions and those past definitions. Better, for a time, to be bearing the pain of crudeness than to assume a pretended beauty that is merely grotesque, that is unsuitable to the material, and will be a laughing-stock for posterity."

By the year 1950 London may be full of plain and simple buildings, but there is no reason why they should lack beauty. If we cannot mistake a warehouse, a house, or a bank for anything but what they are even at the first glance, there will not be much the matter. We shall have got down to realities at last. These, it is too frequently forgotten, were the real genesis of all the styles worth studying, for in them were born all those aims and aspirations in building construction which have endured down the ages. When realities are forgotten, styles get past their tether and collapse, as witness Beauvais. It is in the severe limitations of constructional essentials that true art is generated and reared. Outside them it has not sufficient vitality to enable it to flourish. We are too impatient in these days to recognise this, ut our impatience will avail us nothing. When we realise these things, all the rest will be added unto us.

NOTES

The Scale of Regent-street.

Mr. Chas. Davis Whitaker makes some interesting observations on the value of scale in design which the *Times* published on Wednesday. Unfortunately, since those of us who do know and appreciate the value of scale, and of the simple, friendly, unassuming qualities of the old Regent-street, have been ruled out of our pleasure by the overwhelming call for money values all we can do now is to urge in the strongest possible way a completion of the Piccadilly frontages after Sir Reginald Blomfield's general design. We may at least find some sense of repose and dignity in the buildings which have made up the completion of the Quadrant façades.

Aerodromes and Town Planning.

An important point has been raised by Sir R. Baden-Powell as to the necessity for some definite provision for the landing of aeroplanes in the vicinity of towns. He says that in town-planning schemes there is, as a rule, no definite provision for aerodromes and landing-places. It is obvious that this is a matter which cannot be ignored, and the Air Ministry will be obliged to interest itself in town-planning schemes.

Platitudes.

Believing that the art of building is, to a large extent, influenced by commerce, we would welcome the return of industrial prosperity to this country. Upon this subject Mr. Henry Ford has recently unloaded some typically American advice, and we take it with a philosophical smile. The good advice is compounded of the usual mixture of idealism, economics, and sentimentalism. "One of the main things all over the world people have to learn," he says, "is to pay high wages. If they do not do that they will never make a market." This is a delightful platitude that might easily pass for something profound. No doubt Mr. Ford, fine business man as he has undoubtedly proved himself to be, could tell us whether he was ever in danger of making the mistake of confusing cause and effect. This country can go one better than Mr. Ford: it pays what are high wages—in the form of the dole—for no work.

Litter.

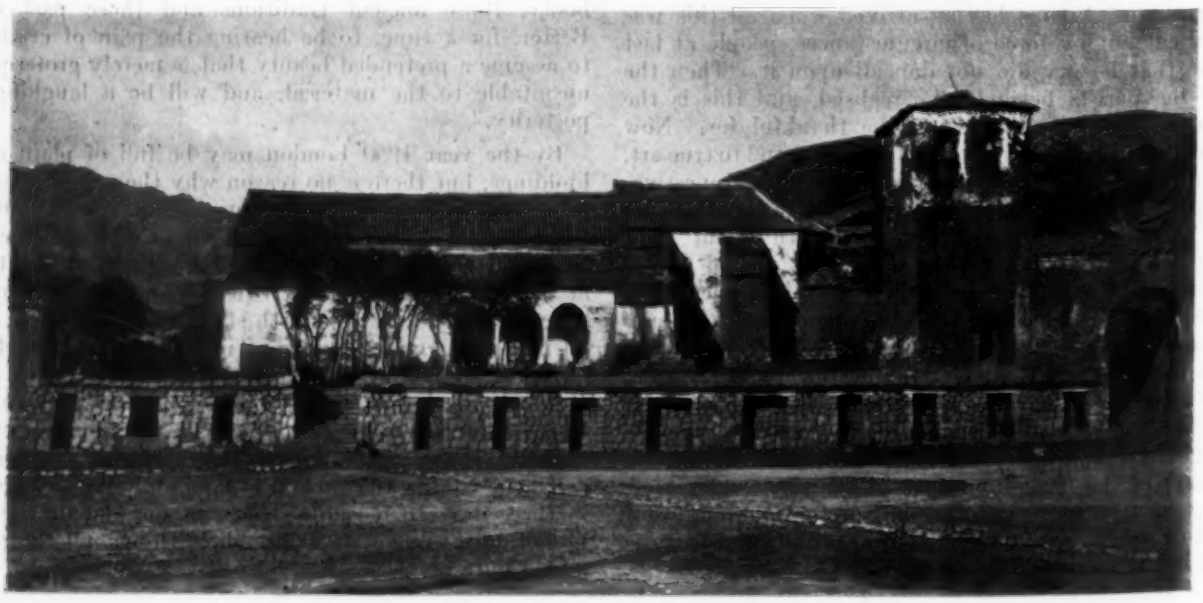
Already the litter nuisance has broken out for the season. Only an optimist, we read, will expect an abatement of the nuisance this year. Apparently all appeals are in vain. It is a serious thought that, in these matters, democracy cannot be trusted to behave with consideration and decency. On the one hand there are appeals to open large tracts of the Highlands as a playground for tourists; on the other there are appeals to save some of the country from destruction. Evidently no one disputes the certain desecration that must follow, and there the matter remains in a civilised nation. One ceases to wonder why the speculative builder should complete the destruction. It is part and parcel of the one problem, and it is of sociological importance.

Architecture and Civilisation.

Architecture is the visible accompaniment of civilisation. Civilisation is undoubtedly its cause, but there are many who regard architecture as both cause and effect. There is some truth in this where architecture establishes a great tradition along with the great state, but it also has its implications as an effect where it generates conditions that are anti-social. From this point of view the history of civilisation might be interpreted with some reason as a prolonged conflict between architecture and the community.

Architects' Antique Furniture.

It was a happy idea to get together a collection of antique furniture belonging to architects for exhibition at the Building Exhibition, as the result proves, for the variety of things collected, including pottery and pictures, makes an extremely interesting show to the number of 159. Obviously, it by no means represents what architects could show if they were willing to lend all their best pieces from home and office; but they have been very generous in lending many things of considerable value. Some of the pieces of furniture represent quite the high-water mark of our English work. The honour of the collection seems to fall to Mr. Martin A. Buckmaster, whose contribution runs to some forty-two exhibits, arranged in one bay together, which contains a number of exceptionally good things, and includes some old pictures. A good deal of pleasure must have been found in getting together such a varied collection, including fine tallboys, chairs, chests, and the exceptional James II black wood stool which we illustrate. Mr. Mervyn Macartney makes some valuable contributions, such as the beautiful Italian mirror which we show, and some examples of modern design. There is nothing more interesting in English furniture than the mirror stands for dressing-tables, in which the utmost delicacy in wood and metal is to be found, and a particularly good specimen is lent by Mr. Ernest Allen. Very interesting examples of old chairs of Adam period are the two lent by Mr. Herbert Wigglesworth. Mr. I. C. Goodison sends a score of excellent examples. Mr. Gotch, Mr. Vincent Harris, Sir John J. Simpson, Mr. Alan E. Munby, Mr. A. J. Pitcher, Mr. Walter Tapper, Mr. C. H. James, Mr. Arnold Mitchell, Mr. Arthur Keen, and Mr. E. R. Hudson are amongst the contributors. Amongst Mr. Goodison's exhibits are two very nice old



A Village Church in Peru.

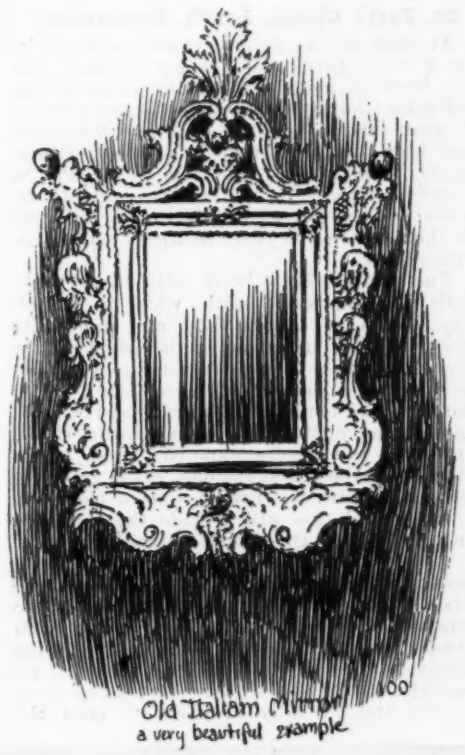
pedestal tables and a beautiful Georgian walnut chair; but perhaps the finest single piece shown is his William and Mary walnut bureau cabinet.

Ancient Lights.

Mr. P. J. Waldram, in his paper read at the Surveyors' Institution and recently reported by us, said he thought that too much importance was often given by architects and surveyors to sun or aspect, and he went in some detail into the question of obstruction to light, pointing out that these could only be regarded legally as detrimental when they reduced the light on a grey day to an intolerable extent. The exact value of sunlight in terms of cash cannot be estimated, and, legally speaking, Mr. Waldram's conclusions are incontestable; yet we can well imagine a man, whose office had always enjoyed the morning sun, leaving the office rather than remain on when the sun was shut out by a high building, even though he could still be said, in law, to have sufficient light to work by. Ideally, every office should enjoy unobstructed sunlight, as might happen in a garden city, and although we are compelled by the circumstances of our towns to forgo the sun with its health-giving and cheering properties, yet we should not look upon our legal definitions of "areas of sky" and "requisite light" as anything but unfortunate and highly unsatisfactory makeshifts forced upon us by unfavourable conditions of our own making.

A National Palace of Art.

This subject, of rather grandiose title, recurs at intervals, but we are not sure that a remedy for artistic ills lies in this direction, or that the object is one most needed for the benefit of the arts to-day. Decentralisation, and the distribution of art through the country are more vital to its prospects than further exhibitions. The phrase has somehow an unpleasant sound, and is foreign to what we are feeling about the needs of art to-day. For the grandiose housing of sculpture in a Palace of Art, as has been suggested, would be to ignore its office as part of the furnishing of the life, the homes and gardens of the people. It is not palaces that will promote sculpture so much as a standard of appeal in the work of sculptors that will create more national demand. For in the end it is the artist who promotes art by the devotion and inspiration of his work. It is no doubt the case that, in a national sense, the commercial developments of building, now going on so rapidly, tend to disperse sculpture and to ignore its claims—Dorchester House is a recent instance. But driven from its natural place in the cities, homes and gardens of the people, the suggestion for a national Palace of Art is but a tawdry alternative, disguising from us the real issues.



A Village Church in Peru.

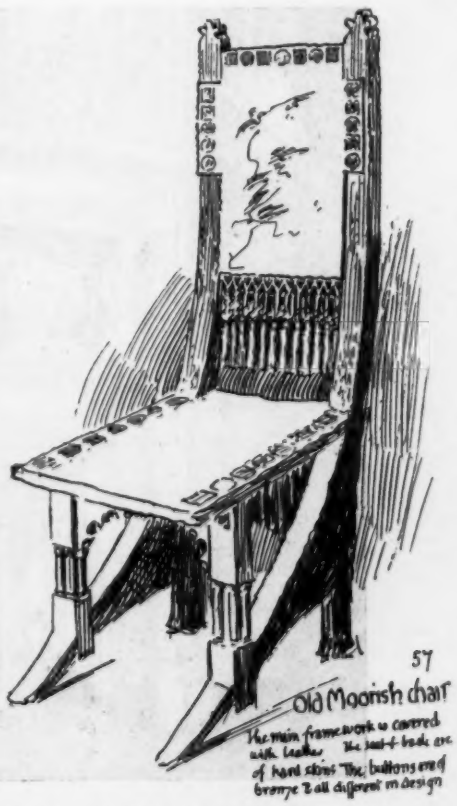
The ecclesiastical architecture of Latin America is but little known in England. From San Francisco to the south of Chile, as well as in the West Indies, there extends a long chain of cathedrals, churches and convents, erected during the three centuries of Spanish rule. It is not only the stately fabrics in the great cities which are deserving of study, since even in the remote village churches much is found that is both interesting and instructive. The parish church of Chincheros, Peru, is thoroughly characteristic. It stands amid the ruins of an Inca building, the massive masonry of which is especially conspicuous on the south side. The structure consists of an apsidal chancel, nave with some lateral chapels and dependencies, and a detached bell-tower to the south-east. The materials consist of brick and rubble, plastered both externally and internally. There are two buttresses of considerable projection on the south side of the chancel, which were doubtless erected to counteract the effect of earthquake shocks, which are frequent in this region. The roofs throughout are covered with pleasing red pantiles. A charming feature is the open porch or loggia on the south, with graceful arches of a free Renaissance type, very popular in Latin America, and recalling the Mudejar work of Southern Spain. The fenestration consists of a few simple round-headed windows. The whole structure harmonises perfectly with its surroundings.

Memorial to Wm. Morris.

We hope the scheme for a Morris Memorial Hall at Kelmscott in Oxfordshire will go through. An admirable design was prepared by the late Ernest W. Gimson, and his friend and pupil, Norman Jewson, has undertaken the superintendence of its erection. The cost is to be £4,000.

The Building Exhibition.

We devote further space in this issue to our notices of the exhibits at the Building Exhibition at Olympia and to the illustration of some of the stands, as well as a general appreciation of the Exhibition itself, but now that its scope and interest are realised we think the occasion requires a word of congratulation to the organisers, Mr. H. Greville Montgomery and Mr. Hugh C. Montgomery, upon what must surely be regarded as the best Building Exhibition ever held in this country. We give some indication in our general impression of the Exhibition of the value to architects, builders and others of such enterprise, and the fact that the gallery as well as the old and new halls are utilised for the purpose of the Exhibition may be regarded as a practical expression of opinion of exhibitors themselves.



Antique Furniture at the Building Exhibition.

GENERAL NEWS

Professional Announcements.

Mr. H. F. Hurcombe, F.S.I., L.R.I.B.A., of the Architect's Department, London County Council, has been appointed Oxford City Estates Surveyor.

Mr. John MacGeagh, architect, has transferred his offices from 132, Scottish Provident Buildings, Belfast, to 2n, Donegall Place.

Mr. David L. Henderson, deputy county architect, Dumbarton, has been unanimously appointed as housing director for the burgh of Greenock

St. Augustine's College, Canterbury.

Reference to restoration work on the great gate and the cemetery gate of St. Augustine's College, Canterbury, is made in the current issue of the college's Occasional Papers. It is stated that during the past two years the two back turrets of the great gateway have been practically rebuilt, and in the past year the two turrets of the cemetery gate have been reinforced with concrete beams and tile "stitches" to bind the masonry together. The work has been carried out under the direction of Mr. Walter Tapper, president of the R.I.B.A.

New Bridge Across the Thames.

The new Albert Bridge spanning the Thames between Datchet and Old Windsor was opened on April 4 by Sir William Mount, Chairman of the Berkshire County Council. The new bridge, built at a cost of about £45,000, takes the place of a bridge built in Gothic style erected in 1852 under the powers of the Windsor Improvement Act. The new bridge is constructed of reinforced concrete in Renaissance style, but with squared rubble towers to avoid conflict with the Norman architectural surroundings and the existing Gothic portion of the old structure. The design was prepared by the county surveyors of Berks and Bucks.

The Scottish War Memorial.

We have received a copy of the official guide—compiled by Mr. F. W. Dens, F.R.I.B.A.—to the Scottish National War Memorial, Edinburgh Castle. This memorial, it will be remembered, was the subject of a special, fully illustrated, souvenir number of *Architecture* — published by The Builder, Ltd., in August, 1927. The official guide, obtainable, price 3d, from 42, George Street, Edinburgh, is a most interesting little production. To read the story of the achievement of Sir Robert Lorimer, A.R.A., and his band of craftsmen is to realise that, given the necessary inspiration and the opportunity, British arts and crafts are the equal to-day of any of the great works of the past.

Mr. George Ogilvy Reid, R.S.A.

We regret to record the death at 11, Carlton-street, Edinburgh, of Mr. George Ogilvy Reid, R.S.A. Mr. Reid, who was in his seventy-seventh year, has exhibited in the Academy since 1872. He was elected an Associate of the Royal Scottish Academy in 1888, and in 1898 was elected to full membership of the Academy.

Mr. Reid painted both landscapes and portraits, and he also executed a number of etchings.

St. Paul's Church, Lozells, Birmingham.

At least one of several churches built in the City of Birmingham about 50 years ago has been so badly affected by atmospheric pollution that the extreme action of pulling it down and rebuilding in other materials has been the only remedy considered adequate. The present condition of St. Paul's Church, Lozells, is a striking example of what destruction is possible to a building in the course of 50 years in the Birmingham atmosphere.

The church is a brick structure, faced with red sandstone with what is technically known as a rock face, and practically the whole of this facing is advanced in decay, the decay having in some places gone on under a coating of hard soot. The moulded and ornamental work and traceries have been constructed in an oolitic stone, and this too, where exposed, is as badly affected as the red sandstone. It is intended to proceed with the first section of the work at once, and this will include the whole of the tower and the front facing the street.

The general idea of the proposed operations is that the red sandstone facing be dressed back to a new sound surface where possible, and the new surface protected from atmospheric action. Where decay is too advanced the defective stones will be removed and replaced with reconstructed stone *in situ* and specially prepared to meet the existing weather conditions. The moulded and ornamental work will be similarly dealt with, the ingredients in the reconstructed stonework being varied in each case to produce harmony as well as stability. The architect responsible for the restoration work is Mr. W. H. D. Caple, F.R.I.B.A., of Birmingham.

COMPETITION NEWS

Newport (Mon.) Street Improvement.

We learn that the President of the R.I.B.A. has recommended Mr. C. F. Ward, F.R.I.B.A., to act as the assessor in the proposed competition for the widening of High-street and Market-street.

MEETINGS

Friday, *April* 20.

Town Planning Institute. Dr. A. Lilienberg on "Town Planning in Sweden." At the Caxton Hall, S.W.1. 6 p.m.

London Society. Mr. Harley H. Dalrymple-Hay on "Some Features of Underground London." 5 p.m.

Institution of Mechanical Engineers. Messrs. H. J. Gough and A. J. Murphy on "Causes of Failure of Wrought Iron Chain and Cable." 6 p.m.

Friday-Thursday, *April* 20-26.

Garden Cities and Town Planning Association. Visit to the North-East of England.

Monday, *April* 23.

Royal Institute of British Architects. Mr. H. S. Goodhart-Rendel on "The Work of Temple Moore." 8 p.m.

Royal Society of Arts. Mr. A. G. Huntley on "Applied Architectural Acoustics." 8 p.m.

Tuesday, *April* 24.

Builders' Clerks' Benevolent Institution. Annual Dinner. At the Holborn Restaurant, W.C. 6.30 p.m.

Incorporated Association of Architects and Surveyors. Mr. E. A. Ward on "Electric Heating." 7 p.m.

Illuminating Engineering Society. Discussion on "Daylight, Artificial Light, and Artificial Daylight; their Merits and Drawbacks." 6.30 p.m.

Wednesday, *April* 25.

Roads Improvement Association. Annual General Meeting. At 12, Great George-street, S.W.1. 5 p.m.

Design for Messrs. Fuller's Premises, Regent-street, W.: The Shop Front.

Mr. Stanley H. Hamp, F.R.I.B.A. (Messrs. Collcutt & Hamp) Architect.

THE REPAIR OF ANCIENT BUILDINGS

XVI

By A. R. POWYS, A.R.I.B.A.

REPAIR OF ANCIENT TIMBER ROOFS AND OTHER WORKS OF FINE CARPENTRY.

As in the case of repair to masonry and brickwork, the object of those who wish to maintain timber constructions is the repair of the individual members rather than a vague regard for the whole, for the latter leads to much renewal. The same procedure should be followed in the repair of carpentry as in other parts of a building. The order of work will be influenced by such features as a valuable ceiling or by ancient coloured decoration or by the acquired character of the covering. The cause of leaks, whether they are due to temporary defects in materials or to fundamental faults in design, should be noted in the survey.

Temporary Covering During Work.

When a roof covering has to be disturbed for repair the parts of the building thus exposed must be protected from weather during the work. Particular care should be taken to secure that old walls and old timbers are not exposed to rain. Convenient covering may be provided by using tarpaulins or by the erection of shelters of corrugated iron or other temporary material. The choice of one or other form of temporary covering depends on the question of which is the more economical. It takes time morning and night to withdraw and relay tarpaulins, and also unless carefully relaid and held in position they may be the cause of flooding, particularly in windy weather. Whatever form of covering is used it should be arranged so as to throw rainwater clear of the walls of a building. When a raised shelter is used, it should be arranged at such a height above the old roof as to allow for men to work below it, and it may be made so that it can be easily moved to cover one section after another as the work proceeds.

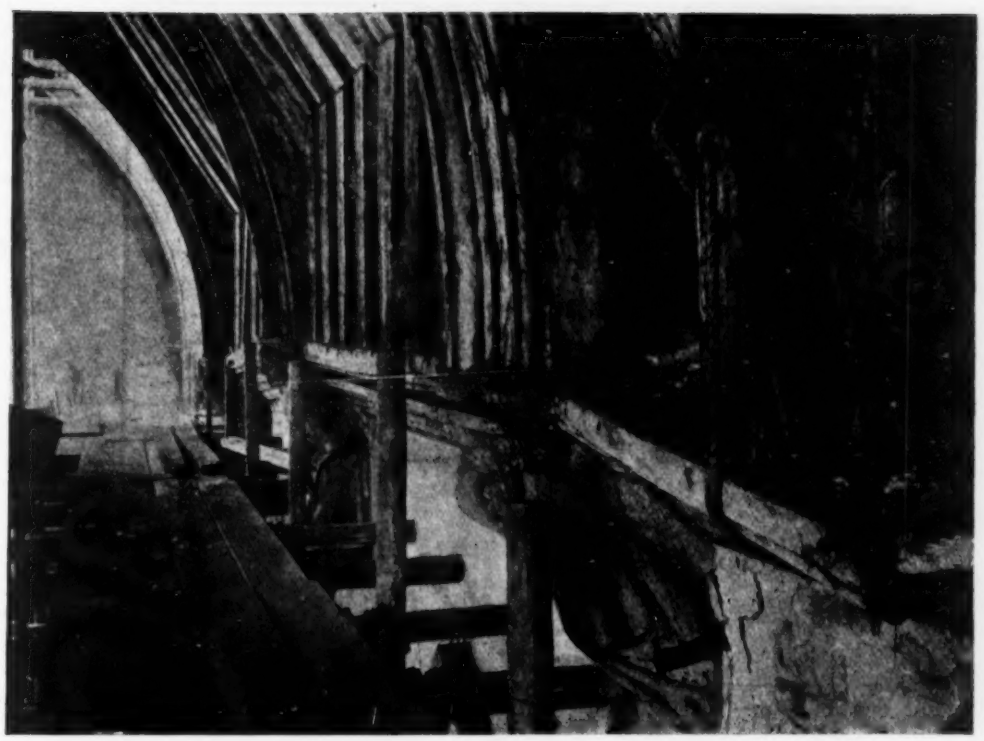


Fig. 20.—Penshurst Place. Roof of Baron's Hall during Repair by Mr. William Weir.

Fig. 21.—Penshurst Place. Roof of Baron's Hall after Repair by Mr. William Weir.

The Survey.

The preliminary survey of the timber roof of a great hall or church is a long and rather costly matter, for the condition of the timbers cannot be known unless they are examined from near by. For this, long ladders are necessary and sometimes scaffolding. The survey from within can be supplemented by examination from without; some tiles may be stripped or lead turned back at suspected points. Many timbers have been and are still being condemned too readily as rotten throughout, whereas in reality only the sap wood was and is defective. The outer one-and-a-half inches of an oak log is always sap wood, and in cutting big timbers from a tree which is not straight, patches of sap wood are commonly left on the edges. It often was, and is rightly still, the custom, in order to avoid waste of timber, not to worry if the big pieces used in carpentry do not hold their full section free from sap for their full lengths, but in every case the sap wood should be cut away from both new and old timber. Indeed, it seems that the beautiful chamfers so often given to the edges of beams wrought in the mediæval tradition had their origin in this wise precaution. Sap wood may be recognised by its pale colour. It is always the first part attacked by worm, and it is not unlikely that its presence attracts the beetle whose larvæ these insects are. An experienced timber merchant advised me not to use the centre wood of big trees, and my experience is that the very heart of an old tree is almost as liable to attack from wood-worm as is sap wood itself. In the fine oak roof above King's College Chapel at Cambridge a brief inspection revealed neither sap nor worm; and it may be that the timbers of this roof are cut from either side of the very centre of the trees which were felled for the purpose. It is also very well ventilated. If a timber appears rotten on the surface, before assuming that it is so throughout, it will be useful to test it with a gimlet. Further, before condemning a timber that is even much decayed, it is well to think whether a greater section than the remaining sound wood would be used in modern work; in other words, whether the remaining timber is not strong enough to do the work it was meant to do. The unseen ends of old beams which are bedded in walls cannot be assumed to be sound until the wall has been opened out about them. For it is at this point that the wood-worm is found to be particularly active. No survey of a timber-framed structure can be accepted as a sure basis on which to prepare a close estimate of the cost of repair. It is inevitable that much must be left unknown until all the timbers are exposed. General experience is the best guide in estimating.

Size of Timbers to be Used in Repair Works.

The Society for the Protection of Ancient Buildings recommends that when new timbers are added to an ancient roof they should be simply worked without enrichment, which may compete, by comparison, with the old. Further, it advises that when a new timber is needed to take the place of one that is too much decayed to be repaired, it should not be carved like the old, and that the main lines of the mouldings only should be repeated.

Mediæval builders allowed such an enor-

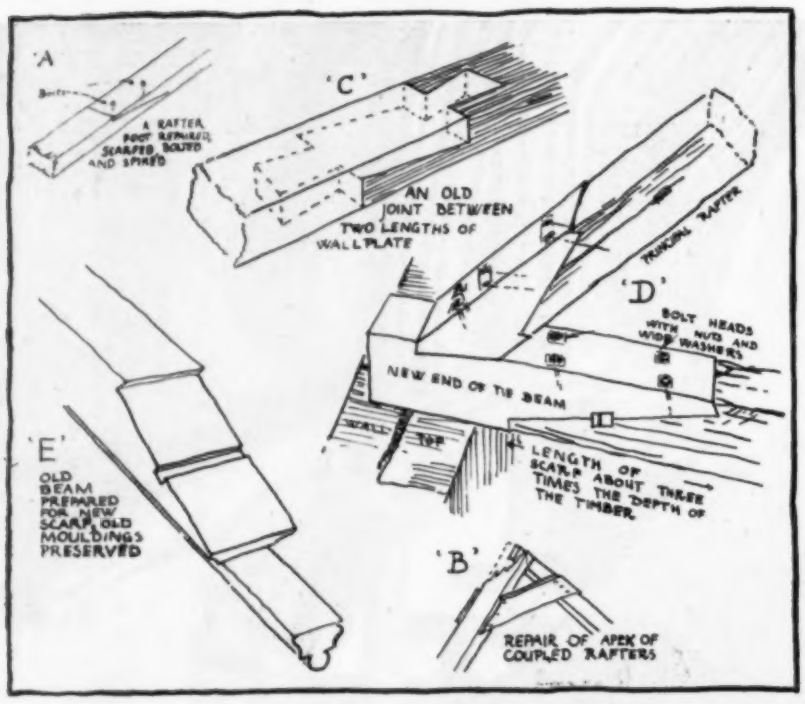

'A'
A RAFTER FOOT REPAIRED SCARFED BOLTED AND SPIKED
'C'
AN OLD JOINT BETWEEN TWO LENGTHS OF WALLPLATE
PRINCIPAL RAFTER
'D'
BOLT HEADS WITH NUTS AND WOOD WASHERS
NEW END OF TIE BEAM
WALL TOP
LENGTH OF SCARF ABOUT THREE TIMES THE DEPTH OF THE TIMBER
'E'
OLD BEAM PREPARED FOR NEW SCARF, OLD MOULDINGS PRESERVED
'B'
REPAIR OF APEX OF COUPLED RAFTERS

Fig. 22.

mous margin of safety in the timbers they used that even when they suffer from decay, the remainder may for long be sufficient to maintain equilibrium. In the repair of their buildings their example as regards safety should be followed. It is better to repair a portion of a roof in their generous manner, and to support the remainder with temporary props pending later opportunity, than to continue the work throughout the whole in a less substantial way.

It is a general principle that roofs of timber should be repaired with like material, but iron, steel, or other metals may be used sometimes to strengthen a joint between old and new, or to reinforce an ancient timber or even a whole framework.

Causes of Failure.

Carpentry fails from many causes, of which the following are the more common :—

(1) Constructional faults : these may be due either (*a*) to poor design, (*b*) to too slight timbers, (*c*) to mutilation done after the work is complete, and more rarely (*d*) to loss of nature in the timber itself.

(2) Rot of various kinds, due to : (*a*) the action of insects, chiefly the larvæ of the death-watch and the furniture beetles, (*b*) the growth of various fungi (dry rot), and (*c*) to the constant expansion and contraction caused by alternate saturation and drying out.

Structural.

In roofs the constructive defect most commonly found is the want of adequate means to resist the outward thrust of the two slopes. In this matter, as in arched masonry, "drift" as well as thrust must be withstood. Many mediæval roofs were designed without tie-beams, particularly those which are of the hammer-beam kind. In these cases it is desirable to make sure that the roofs are designed or strengthened so that only a direct vertical load comes on to the walls, and this is the more desirable when the walls are old and already weakened by fractures or by leaning over a little. The mediæval builders, in their desire to have high open roofs unbroken by tie-beams from wall to wall, sometimes made roofs which, through the centuries, have spread outward on the walls, carrying the latter with them. Although we may regret to change an old design by the addition of tie-beams or rods, such new members should be added when, because of their absence, strain has come on old roof timbers and on the joints between them. The eventual loss of the original timbers of an old roof and the weakening of walls consequent on the want of tie-beams or rods is far more serious than the change caused by the addition of a suitable tie.

The parts of a roof which are the first to decay are noted below, and these are also indicative of the parts which in other framework are often defective :—The ends of rafters, especially their feet, wall plates, the wall ends of tie- or hammer-beams, the backs of cornice planks and wall-legs, the tenons of purlins and the mortice holes that take them, the backs of principal rafters that are close boarded, and the ends of beams built into walls.

English oak should be used for the repair of a roof originally framed of this wood. Seasoned timber, which is now hard to get in large sizes, should be used for the members which would suffer from the results of shrinking; particularly is this so for those timbers which abut diagonally with others, as do most bracing pieces. It is not so important that common rafters which lie comparatively free on the framed roof trusses and purlins should be seasoned; again, in very simple framed constructions seasoning is not so important as in more complicated structures. One disadvantage of unseasoned timber, particularly when it contains the centre of a tree, is that it "shakes" or cracks longitudinally. These cracks do not usually much reduce the strength, but provide crevices that are ideal nurseries for the progeny of the timber beetles.

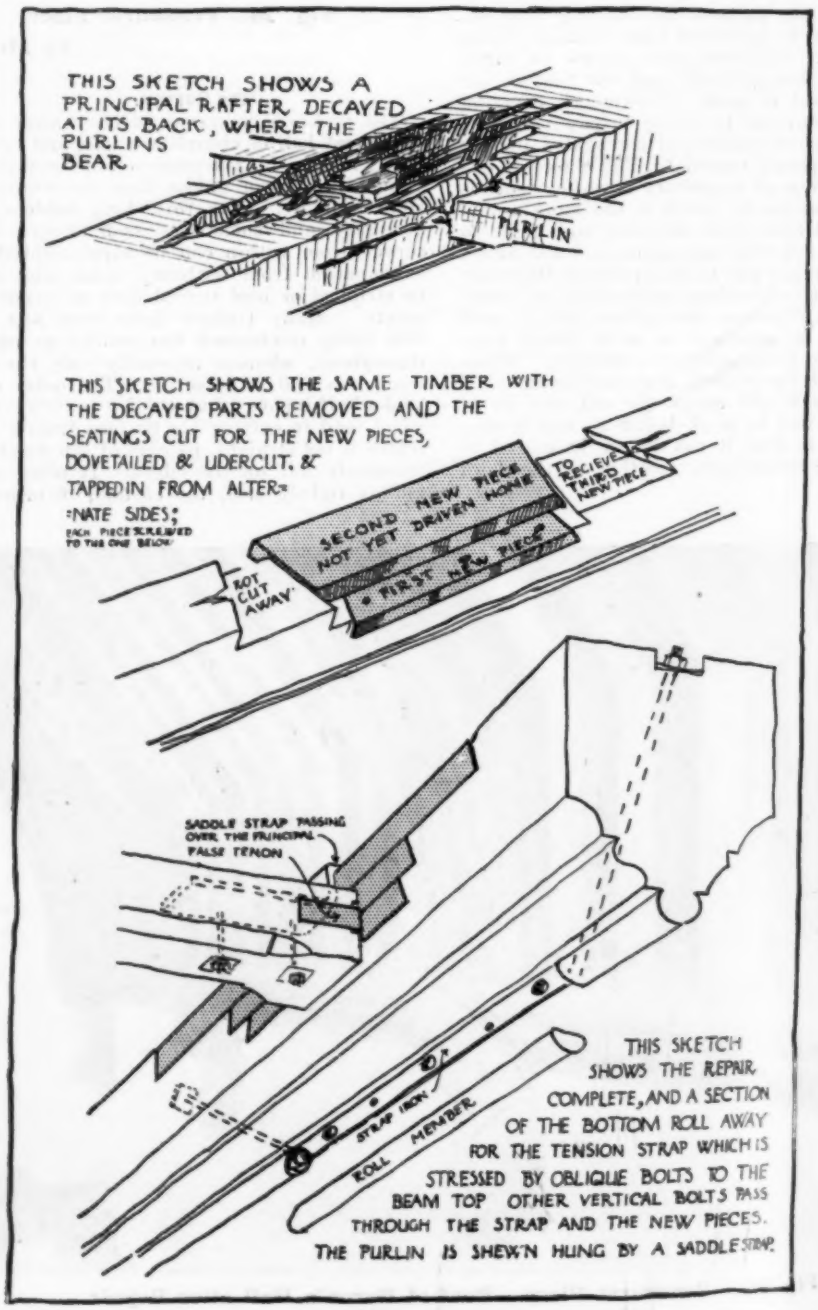

THIS SKETCH SHOWS A PRINCIPAL RAFTER DECAYED AT ITS BACK, WHERE THE PURLINS BEAR
PURLIN
THIS SKETCH SHOWS THE SAME TIMBER WITH THE DECAYED PARTS REMOVED AND THE SEATINGS CUT FOR THE NEW PIECES, DOVETAILED & UDERCUT, & TAPPED IN FROM ALTER-NATE SIDES; EACH PIECE SCREWED TO THE ONE BELOW
SECOND NEW PIECE NOT YET DRIVEN HOME
TO RECIEVE THIRD NEW PIECE
FIRST NEW PIECE
ROT CUT AWAY
SADDLE STRAP PASSING OVER THE PRINCIPAL FALSE TENON
STRAP IRON
ROLL MEMBER
THIS SKETCH SHOWS THE REPAIR COMPLETE, AND A SECTION OF THE BOTTOM ROLL AWAY FOR THE TENSION STRAP WHICH IS STRESSED BY OBLIQUE BOLTS TO THE BEAM TOP OTHER VERTICAL BOLTS PASS THROUGH THE STRAP AND THE NEW PIECES. THE PURLIN IS SHEWN HUNG BY A SADDLE STRAP.

Fig. 23.

Common Methods of Repair.

If a roof is taken right down for repair much more is lost than if it is repaired in position; again, the same loss of old work is found to happen unless a roof is repaired bay by bay. Thus the procedure usually should be: (1) to strip the covering from the portion to be repaired, (2) to remove the boarding carefully and store under cover for re-use, (3) to remove the rafters and repair them on the staging immediately below the roof, numbering them so that they may be again placed in the same positions they originally held, (4) the purlins, or at least some of them, can usually be repaired without moving them from their positions, (5) every effort should be made to repair the timbers of framed trusses in position. Every defect in the members of a roof needs its own special treatment, yet certain methods of repair are general, and with slight modifications may be applied in most cases.

Rafters.

As a rule it is possible by renewing a certain number of these to repair the remainder by lengthening them with wood cut from the old rafters that are replaced. In this case the joints should, if possible, be made above the purlins, and the joint may be a simple scarf, the two pieces being bolted together (see Fig. 22A). In coupled rafter roofs, where the tops of the rafters are becoming defective, it may be convenient in the interests of economy to strengthen the junctions of rafter and rafter without adding new ends. This can be done by spiking boards 1 in. thick by 9 in. wide on each side, a little below the ridge (see Fig. 22B).

Wall Plates.

Wall plates are the timbers which lie on the wall top to take the feet of rafters. They may rest on the ends of tie-beams and span the space between them, or in some earlier coupled rafter roofs they may lie across the thickness of the wall on a couple of longitudinal plates. Frequently these members of a roof are further decayed than any others. This is due to the fact that they are often surrounded by mortar or dirt, sometimes even they are found to be buried in earth. Ventilation is essential to long life in timber. Therefore the wall top must first be cleaned of all rubbish and dirt, and must be made sound and level with concrete or otherwise, so that new and old timbers may be free on all sides to the air. Often wall plates need entire renewal. They are a vital part of a roof, and should be continuous from tie-beam to tie-beam. They should be of such section as will best resist buckling outward in a horizontal plane between the tie-beams, and they must be securely fixed to the tie-beams or rods to resist the outward thrust of the roof. Elaborate as well as simple joints are found between lengths of wall plates in old roofs. An example of the former kind is shown on Fig. 22C.

Tie Beams.

The ends of tie-beams and hammer-beams are commonly defective, because the same causes of decay are present as occur in the case of wall plates. As a rule, repair may be made by scarfing on new ends; sometimes iron or steel flitch plates are used instead. The accompanying sketches show the methods (see Fig. 22D). The Society for the Protection of Ancient Buildings recommend new ends of English oak as preferable to repair with iron, but it is not always possible to avoid ironwork, and sometimes by its use more old timber is preserved than can be done otherwise. It is Mr. Wm. Weir's practice to scarf on new ends.

As a rule, in this position more of the old moulding of the tie-beam may be preserved by putting the short length of the new scarf on the under-side, and the long part on the upper, which is contrary to the usual practice of commercial work. For the sake of clarity in these sketches mouldings are not shown. In a richly-moulded beam the moulding, or at least the lower mouldings of the old beam, may sometimes be preserved by scarfing the old timber, as Fig. 22E. But

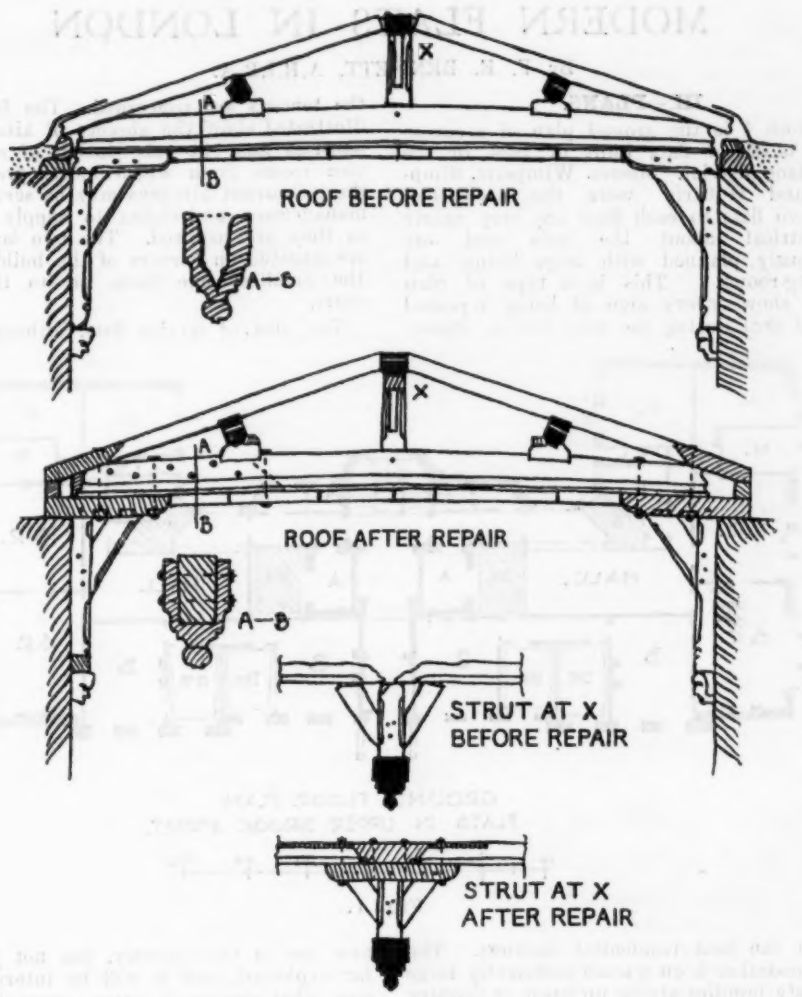


FIG. 24.

what can or cannot be done will always depend on the amount of rotted wood which has to be cut away. The sketches on Fig. 22 are intended to be suggestive of methods of repair, and are not to be taken as final. Sometimes it may be found convenient to cut a roll moulding off and to spike or screw it on again after the scarf is made.

Principal Rafters.

In sketch, Fig. 22E, a new foot is shown scarfed on to a principal rafter, but these members of a roof are also often found to be defective at the points where they are morticed for the purlins; in such cases it may be possible to insert new pieces of oak, somewhat as shown in Fig. 23, but such piecing should, as a rule, be strengthened with ironwork.

In Fig. 23 the hatching represents new timber laid in in three pieces; each piece may conveniently be a little wider than the beam to be repaired. Each piece should be cut wedge-shaped and tapped into position from the side, and the joint made tight by saw-cuts during the process. Each piece when in position should be screwed to the old beam or piece below, and when all are in position the whole would be bolted up with the iron tension strap. Each piece could be put in from alternate sides. When all is bolted up the new timber may be trimmed to the thickness of the beam. Mr. Wm. Weir often cuts out the rotted wood from above, leaving the sound cheeks of the beam and inserts in the space so made sound oak. The renewal of the core of an old timber is illustrated here in conjunction with the repair of a low-pitched roof. The hollow space in the back and in the heart of the oak was turned to advantage for gaining the additional strength required (Fig. 24). Seasoned timber is necessary in either case.

Purlins.

Purlins, the horizontal timbers supporting the rafters and spanning the space between principal rafters, may be repaired as the other members of a roof already referred to. Like other timbers, purlins decay first at their ends and often before they have lost strength; the tenon by which they are supported turns to powder owing to the activity of wood-worm. Fig. 23 shows the usual method of repair, by means of strap-irons and a false tenon.

Wall-legs are the upright timbers, sometimes resting on corbels, which stand against the wall beneath tie- or hammer-beams. These timbers and others which back on to walling suffer severely from the ravages of wood-worm. That insect thrives in just such dark and sheltered positions as the narrow space between wall and timber. Repair may be carried out by sawing off the back of these timbers and substituting new sound oak. A further precaution is important; the back of the new timber should be kept just free of the wall and plaster. For structural reasons the back must press on the wall, and provision can be made for this by allowing two or three stones to project against the back of the timber, or by fixing at intervals oak fillets on the back. Timber cornice members at the wall top and between the principal rafters of mediæval roofs should be treated in the same way as wall legs.

The Ends of Beams in Walls.

Where old beam ends are built into walls or where new ends are put to take the place of old in this position, they should never be built in closely with mortar and masonry. Always there should be space about the ends for ventilation, and this may be provided by forming clean pockets of concrete or masonry at least 2 in. wider and deeper and higher than the timber to be placed there. Where the beam so placed has to carry a moving load it may be wedged tight with dry slates driven in, but even in these cases no mortar should be allowed to come in contact with the timber.

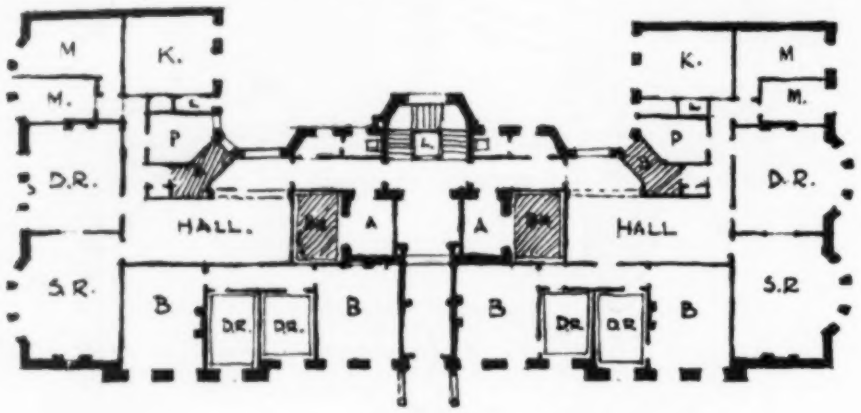
(To be continued.)

MODERN FLATS IN LONDON

By F. E. BENNETT, A.R.I.B.A.

III.—PLANS.

Figure 1 is the ground plan of a seven-story block of flats built in 1924 in the Park-lane district. Messrs. Wimperis, Simpson and Guthrie were the architects. The two flats to each floor are very nearly symmetrical about the axis and are generously planned with large living- and sleeping-rooms. This is a type of plan which shows every sign of being repeated a good deal during the near future, especially in the best residential districts. The accommodation is on a scale sufficiently large to satisfy families giving up town or country houses in order to simplify difficulties of domestic routine. Although fourteen different families share the one building, each family is well dissociated from the others, and the very essential feature of privacy is not seriously interfered with. One lift for all may possibly be inadequate; two lifts, or one larger one separated from the stairs, might have given more fluent circulation. The incorporation of dressing-rooms in the plan is an unusual feature, and being, as they are, of sufficient size, they may also be adapted as occasional bedrooms. When they are so used, however, the one bathroom becomes hardly sufficient. Four bedrooms in a good modern flat call for the service of three, or, at least, two, separate bathrooms. The bay windows give the living-rooms a pleasant shape.



GROUND FLOOR PLAN
FLATS IN UPPER BROOK STREET.

Fig. 1.

Fig. 2.—Typical floor plan; four flats; 8 rooms to a flat; 8-story building; Warwick gardens, Kensington. Architects: Mr. C. H. Roberts and Messrs. Joseph.

The last plan, doubled over about its party wall line, gives a plan very much like this one in its division of flats and position of stairways. The type of the flats, however, is much different, the bedroom suites being much larger in relation to the living-rooms, which forces a greater length of corridor. A noticeable feature is the modern tendency to reduce the size of the dining-room, which nowadays becomes more and more used purely for meals. By erecting the service stairs and lifts in the open air a big economy in the planning is obtained—a device which can give no offence in this building, as there are no living- or bedrooms facing on to the inner court.

The fashion for Georgian style elevations now produces a standard fenestration in the major rooms of two window openings, as against one large, squarish one commonly employed some years ago, notably in the flats designed by Mr. Frank Verity.

The flats in Grosvenor House are stated to be designed with the object of completely eliminating the servant problem so far as the tenants are concerned. The four plans illustrated show the absence of kitchens and pantries and the substitution of small service rooms from which meals prepared in the restaurant kitchens may be served. The management undertakes to supply servants as they are required. The two larger flats are situated on corners of the building, and the smallest one faces on to the inner court.

The idea of service flats, although not a new one in this country, has not yet been far exploited, and it will be interesting to note what success it gains, especially when carried out on such a large scale. It seems to anticipate a demand for flats on very short leases—for periods of months only—the building having a nature half-way between a hotel and a block of residential flats.

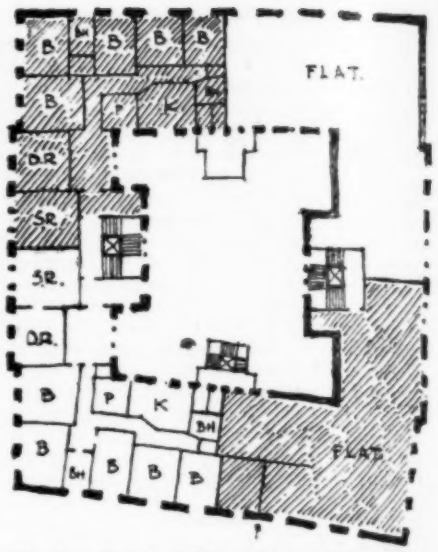


Fig. 2.—Typical Floor Plan (four Flats), Warwick Gardens, Kensington.

Mr. C. H. Roberts and Messrs. Joseph, Architects.

The sketch of the treatment of the elevations of Grosvenor House—previously referred to—shows how the ever-difficult problem of providing sufficient support æsthetically for the building above when there are shops on the lower floor, has been extremely well handled by placing a strong band of richness in between the two. The direct change from stone to brick which occurs above the first floor is a very courageous piece of designing which serves to assist this dissociation.

A perspective drawing was illustrated in *The Builder* (Sept. 9, 1927), of another large block of flats which is being built over Baker-street Station by the Metropolitan Railway Company. This is to contain no

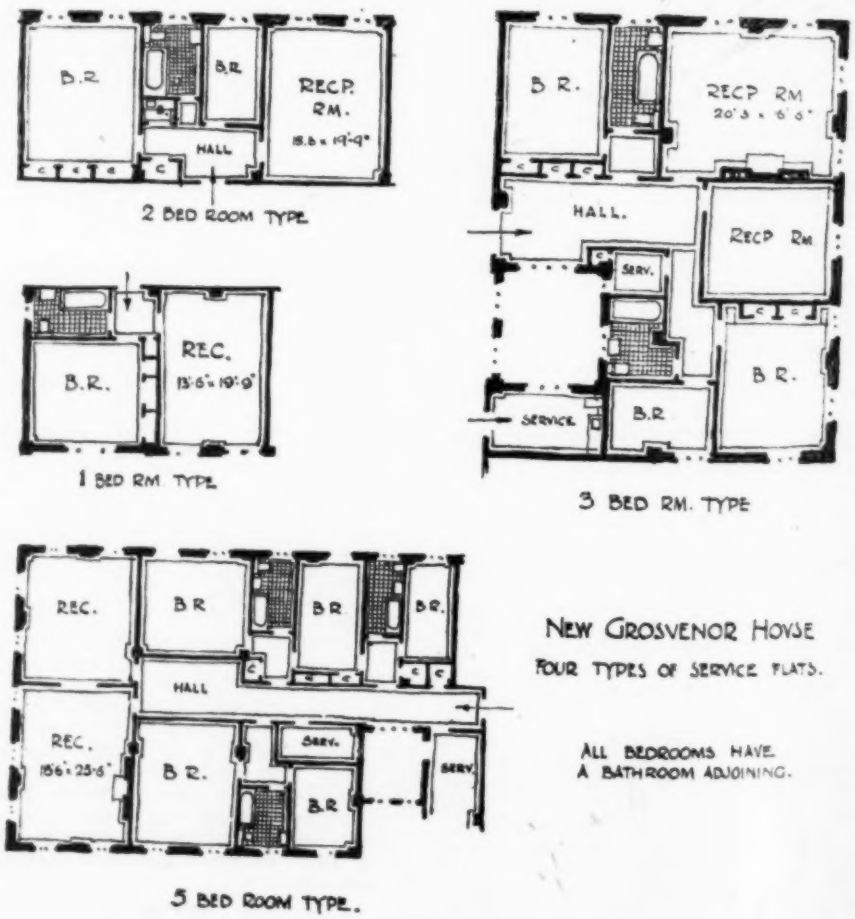


Fig. 3.

fewer than two hundred residential flats, ranging in size from five to ten rooms, as well as a grand lay-out for the ground floors. On first thoughts the building looks a little ambitious for its district, but its plan will no doubt show some features to make the building particularly attractive. Drawings of the floor plans are not yet available for publication, but they are to be anticipated with some interest.

"Knightsbridge Court," which consists of shops and eight floors of flats, opens up the prospect of much more flat building in the Sloane-street district. Messrs. Dudley Newman and Elliott have, with this building, been singularly successful in their general disposition of the component parts, and by arranging the entrances in the courtyard to be approached from Sloane-street, under a central archway, have produced a pleasant result, similar to that of Queen Anne's Mansions, although on a smaller

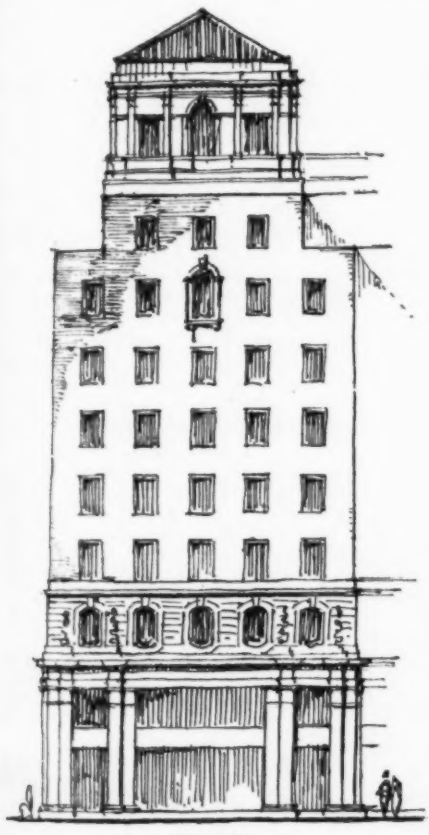


Fig. 4.
New Grosvenor House. Sketch Elevation of Projecting Wing and Pavilion over.

scale and without so much darkness occasioned by the great height of the latter building. This is a good scheme where the front abuts on to a busy thoroughfare, as it does here, and where there is no side or rear access.

The plans show a typical arrangement of eight flats, symmetrically placed, four on each side of the axis, each half with its own entrance, stairway and central lift. In the planning of the unit flat no pretensions to modernness have been made, and the traditional ideas of the English home have been kept completely intact. The dining-room is large, and the kitchen, together with a scullery, is kept at the other end of the corridor, with its windows facing on to another front, thereby preventing a nuisance which is likely to arise in a modern plan, namely, that of kitchen smells entering the living-rooms.

This being one of the first large blocks of flats in its district, and the district being one perhaps peculiar for its adherence to tradition, the maintenance of old styles in preference to the new is to be understood. A feature of the first floor plan is the provision of doctors' flats, one of which contains a large waiting-room, a consulting-room, a secretary's room and a laboratory. A general garage for the use of tenants is provided on the ground floor.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

"Architecture, Nature and Magic."

Sir,—The following extract from Mr. Arthur Weigall's "Ancient Egypt" may interest the readers of Mr. Lethaby's last article in your journal.—

"A pyramid . . . was a symbol of the sun-god Re, for it was an enlargment of the benben, or sacred stone in the form of a pyramidion, which stood in the temple of Heliopolis, and in constructing his tomb in this shape the Pharaoh was asserting his connection with that deity, for his body was to lie for ever encased in the heart of this vast solar emblem."

I hope to see many more of Mr. Lethaby's interesting articles in *The Builder*.

Edward T. Salter.

Architects and Decorators.

Sir,—I do not wish to occupy your valuable space continuing a discussion which I fear has ceased to interest your readers owing to the length of time which has elapsed since my last letter appeared, but a few points in Mr. Giles's letter in your issue of April 13 might be referred to briefly. At the joint meeting between the I.I.B.D. and the R.I.B.A. although most of the speakers had some complaint to make, the vote, by a large majority, decided that "the relations between architects and decorators are satisfactory." Let us accept this ruling. What next? The next discussion between the I.I.B.D. and the R.I.B.A. might be: "Is Modern Decoration Satisfactory; if not, why not?"

I think it was clearly stated in my first letter that very few architects or decorators really understood the essential factors in good decoration. An architect is naturally judged by the final effect of his work, both outside and in. No architect can claim to know his business who is not a designer and artist. Mere assertions, however, are not arguments and I fear that Mr. Giles and I may have different notions as to how much an architect should know about decoration and how much a decorator should know about architecture. I have little faith in the opinion of professors as to the value or otherwise of academic courses for the simple reason that they always recommend academic courses.

Schools and universities cannot supply all that is required, for the very good reason that only a long and arduous personal investigation of the principles underlying that unity of spirit and harmony of detail which we find in all great periods of architecture and decoration can give a man that intuitive instinct which marks the work of a man of talent or scholarship. Stevens's greatness was due to the manner in which, as a youth, he had absorbed the spirit and traditions of the great Florentine masters. Mr. Giles, through your kindly offices, has now communicated with me direct, and I therefore propose to continue this discussion with him privately.

Anglia.

ARCHITECTURAL ACOUSTICS

The first of the Dr. Mann lectures was given on Monday night at the Royal Society of Arts by Mr. A. C Huntley on "Applied Architectural Acoustics."

The lecturer said that the Greeks knew something about architectural acoustics, though it was probable that they arrived at their knowledge by "hit or miss" methods, for their theatres were entirely in the open air. Open-air theatres presented several difficulties, and the Roman theatre was a distinct advance on the Greek from the point of view of acoustics. Every building had its own particular acoustic problem. It was a subject which concerned us vitally in practically every building, large or small, erected to-day. In America more progress had been made with the subject than in this country. Tests were recently carried out in the United States, as the result of which it was found that a typist used 19 per cent. more energy in exhaling a breath in a room where the noise was excessive than in one which was comparatively quiet. One very often heard the remark that a person had become accustomed to noise. Really it meant that the process of eliminating that noise in the brain had become subconscious. Energy was being expended in a useless way in blotting-out some irrelevant noise; that energy could not be used in concentrating on the work in hand. It was known that 95 per cent. more sound was reflected from hard walls than from walls made of felt or composed of curtains. When sound was being reflected backwards and forwards it was obvious that it must take a certain time to operate. Reflection was therefore necessary in order to increase the range of the speaker. But, on the other hand, reflection of sound was a serious disadvantage unless it was reflected uniformly. Control of reverberation was the essential condition to be had in architectural acoustics.

Further lectures are to be given by Mr Huntley on April 23 and 30.

LECTURES ON ARCHITECTURE

Rhineland Churches.

Sir Banister Fletcher, F.S.A., F.R.I.B.A., lecturing recently at the Central School of Arts and Crafts, showed how the chief track of the arts in the mediæval period of Germany's history lay along the Rhine. The romance of the Rhineland was not confined to its legendary lore, but applied also to the wonderful churches, which were erected in the Romanesque style in the eleventh and twelfth centuries. This style was taken from North Italy, and a special variant of it was created which lingered on and retarded the Gothic style, while a mixed transitional style was also evolved. The lecturer illustrated and described the Tomb-House of Charlemagne at Aix-la-Chapelle, the Cathedral and Liebfrauenkirche at Trèves, and other fine buildings, with their triple apses, treatment of pilasters and corbel-tables, and their varied towers and turrets.

Gothic architecture in Germany was not an evolution from the Romanesque, but was copied direct from France at the time of its full development in that country, and lacked the delicacy and spirituality which is the soul of French Gothic art.

The Charm of Brickwork.

Sir Banister, in his last lecture of the present series, dealt with Belgian and Dutch Mediæval Architecture, and referred to the very varied history of the two countries, Holland and Belgium, and the influences which differentiated their architecture, Holland largely receiving German influence, while Belgium came mainly under French influence.

Belgium evolved a rich and sometimes effusive style of brick and of stone, in which the civic buildings of her cities were created, reflecting the independent and prosperous condition of the country. In Holland, on the other hand, a barer and more stolid style became common; in both countries the characteristic groups of buildings had become familiar to us, and much influenced our architecture in the seventeenth century. Many interesting lantern slides showed the most important churches of the two little countries, with all their elaboration of traceried windows, pinnacled buttresses, and lace-like spires. Next September a new course of lectures will probably be given on Renaissance architecture.

ILLUSTRATIONS

Stratton House, Piccadilly.

We give this week an illustration of the block of flats in Piccadilly, known as Stratton House. It has an extensive frontage to the Green Park and other frontages to Stratton street on the east, and Bolton-street on the west. The ground floor is used for banking and business purposes, while the upper floors are devoted to flats. The architect is Mr. W. Curtis Green, A.R.A., F.R.I.B.A., while the builders are Messrs. Holloway Bros. (London), Ltd.

Cambridge University Library.

We illustrate this week a perspective of the provisional design of Sir Giles Gilbert Scott, R.A., for a building to be used as the University Library. This is to be erected at a cost of nearly £500,000 on part of what was once King's and Clare Colleges. It provides for the housing of over a million books.

The Stone House, Bishopsgate.

This new building, standing in Bishopsgate, at the corner of Houndsditch, has been set back on the Houndsditch frontage some 18 ft. to accord with the scheme of widening undertaken by the City Corporation. The main entrance has been placed in Houndsditch, so as to give unbroken facade to Bishopsgate. The three elevations have been carried out in Portland stone, and the large windows ensure a well lighted interior. The simple character of the plan is shown in the illustration, which is constructed as large open floors, to be divided to suit tenants' requirements, the internal corridors in the centre of the building being lighted by the two small areas. In addition to the area windows the main staircase has a large circular light at the top of the building. The sub-basement is provided for the accommodation of the heating installation, as well as an artesian well and tanks.

The main entrance hall is lined with Hopton Wood Stone mosaic paving with a rather unusual rendering of fan pattern mosaic. The main staircase is reinforced concrete with terrazzo pre-cast treads and risers. The dado up the staircase is formed of curved tiles 12 in. by 9 in. The ornamental balustrade is partly made of wrought iron from an old French pattern, with handrail of polished teak. Letter chutes are provided on the main staircase, with collection boxes in the basement, and on each landing synchronome clocks are fixed.

The general contractors are Messrs. W. H. Lorden and Son, Ltd.; steelwork by Messrs. Dorman, Long and Co., Ltd.; stonework by The Bath and Portland Stone Firms, Ltd.; heating and ventilation by The Norris Warming Co., Ltd.; mosaic floor and terrazzo by the Decorative Tile Co.; staircase (balustrading), Messrs. Galsworthy, Ltd.; electrical work, Messrs. H. Page and Sons; sanitary fittings, The Leeds Fireclay Co., and Messrs. Shanks and Co.; fire-escapes, Messrs. Haywards, Limited; fibrous plaster, Messrs. Geo. Jackson and Sons, Ltd.; curved tiles to staircase, Messrs. Shaw's Glazed Brick Co., Ltd.; metal windows, Messrs. Doodson and Bain, Limited; radiators, the National Radiator Co., Ltd.; Robin Hood boilers, the Beeston Boiler Co., Ltd.; artesian wells, Messrs. Alfred Williams and Co.; letter chutes, Messrs. E. Coules and Son; lifts, Messrs. Waygood-Otis, Ltd.; clocks, The Synchronome Co., Limited; marble work, Messrs. Chas. Walker and Co.; marble floor to bank, Messrs. J. Whitehead and Sons, Ltd.; asphalt, The Improved Asphalte Co., Ltd.; lantern lights, British Luxfer Prism Syndicate, Limited; pavement lights, Messrs. J. A. King and Co., Ltd.; bronze frames, Messrs. J. R. Pearson (Birmingham), Ltd.; carving by Mr. P. G. Bentham, A.R.B.S. Messrs. Richardson and Gill, FF.R.I.B.A., were the architects.

New Regent-street Shopfront.

The design of this shopfront—179-183, Regent-street, W.—is based on the principle of obtaining the maximum amount of window or show space and yet avoiding the vulgarity of the usual vast expanse of glass. This is obtained by the valance effect of the metal design above the main glass space commencing from the top corners and radiating towards the centre, which is marked as a climax to the scheme by the introduction of a clock. The whole of the metal work of this shopfront is in verdigris finished bronze with the enriched portions treated to give an antique appearance. The bronze work is finely chased with cross graining representative of hammer marks usually seen on modern wrought-iron work, but most effectively used in this case on bronze. Framing the head and accentuating the main windows is a very free and fully developed, though not a repetitive, conventional design of exotic floral *motif*.

Other points in the design which deserve more than a cursory glance are the very completely designed little grilles that occur in the centre of the base to each window and also the entrance door so definitely centralised by the splayed side to the entrance porch. Modern engraved glass has been used to some advantage in the clock face and to the ceiling of the porch. That used in the first instance is in amber-tinted glass with vermilion enamelled figures which reflects the lighting scheme of the shop beyond. The window backs are formed of a bronze framing to panels of mirror which are engraved in a design following that of the metal work above the shop window. Messrs. Yates, Cook and Darbyshire are the architects. Messrs. J. Starkie Gardner carried out the design, the glass being supplied by Messrs. Arnault, Ltd.

New Offices of Midland Bank, Ltd., Poultry.

We show this week a view of the new offices of the Midland Bank, Ltd., Poultry, E.C. Sir Edwin Lutyens, R.A., has been associated in this with Messrs. Gotch & Saunders. The building was fully illustrated and described in our issue of October 7, 1927.

Messrs. Fuller's, Regent-street, W.

The schemes illustrated show designs prepared for a portion of the decorative scheme in connection with the new building. The intention of the architect, Mr. Stanley Hamp, F.R.I.B.A. (of Messrs. Collcutt and Hamp) was to introduce a colour treatment, using a Della Robbia faience and marble, coloured plaster and metal work. The illustration of the shop front shows a method of treatment to produce an effect which was thought would be most suitable for a business of this character.

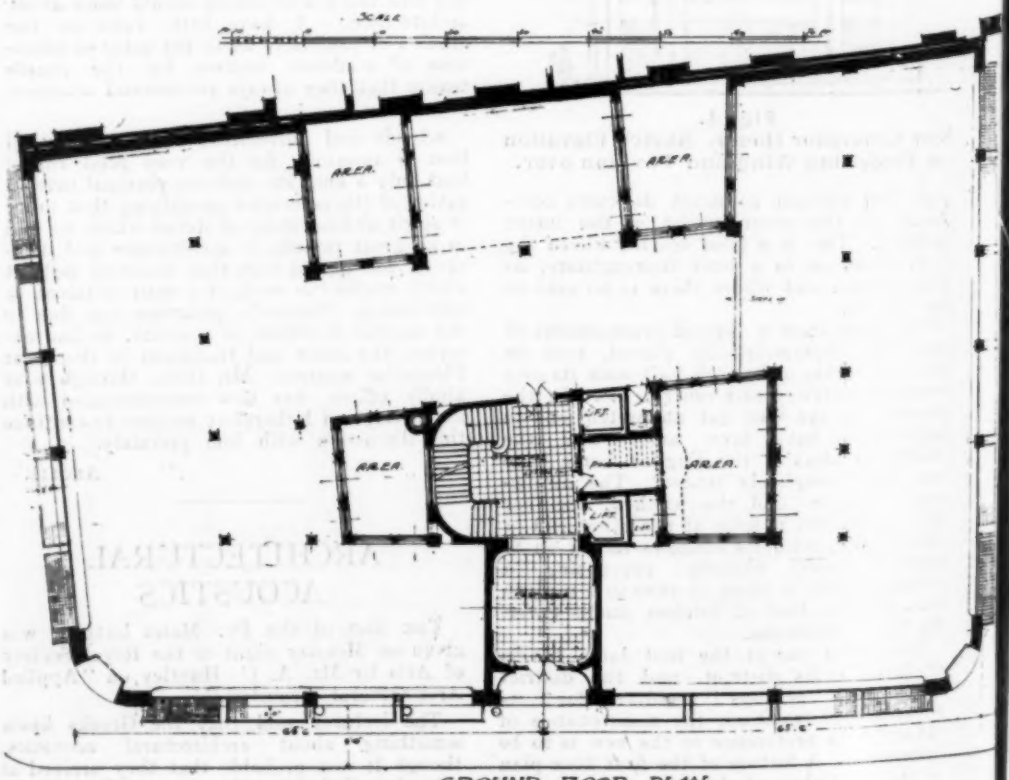
The interior of the shop was designed to give a feeling of space with an architectural setting. In this it was proposed to use a combination of Roman stone, Della Robbia with modelled faience features, and a rich decorative ceiling above of blue and gold. The counters were of Roman stone and metal of a simple design. Special lighting effects were to be introduced. The scheme that was eventually carried out was of a different character.

Housing Scheme, Mount Pleasant, Stockton-on-Tees.

These cottages and flats have been erected on a pleasant open site sloping to the south, to rehouse a number of families removed from the area condemned as unhealthy in the centre of the city. Immediately to the south there is a large recreation ground, and the steepness of the slope enables most of the cottages to overlook this. The blocks of flats each contain four dwellings. Those on the ground floor are entered from the front, and those on the first floor from the side. The cottages are mainly of the "A" type, but a few of the parlour or "B" type have been constructed on the eastern portion of the site for those who can afford a dwelling of this class. As the sitting-rooms to the "A" type cottages face the front, care has been taken that none of these has a north aspect. Messrs. Lanchester, Lucas and Lodge, FF.R.I.B.A., are the architects. The contractors for the whole of this work are Messrs. Stephen Coates, Ltd., of North Ormesby, Middlesbrough.

Knightsbridge Court

The illustrations of these flats refer to Mr. F. E. Bennett's article on "Modern Flats in London," on page 672.



GROUND FLOOR PLAN.

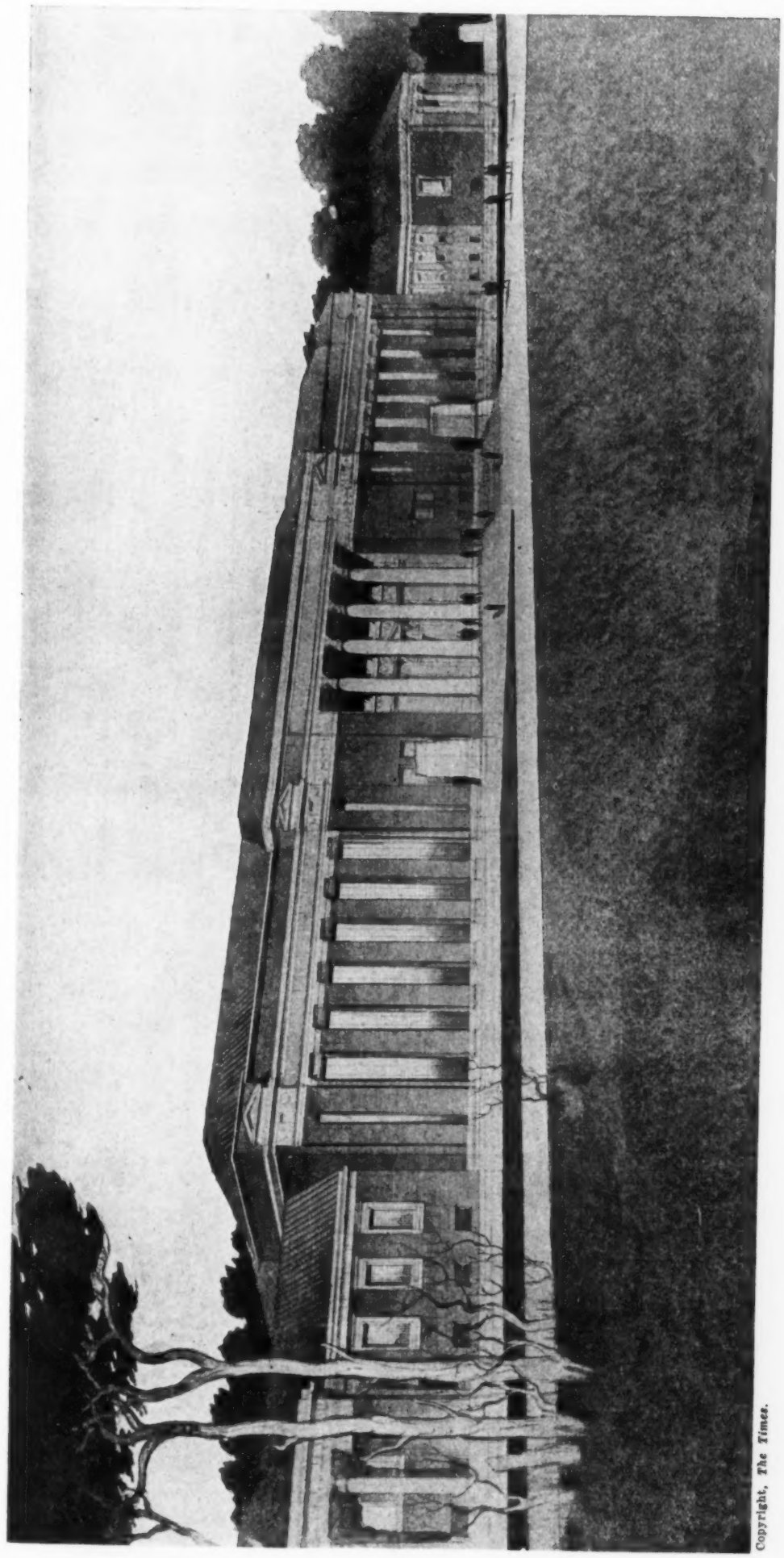
Stone House, Bishopsgate and Houndsditch, E.C.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects.

Stratton House, Piccadilly, W.

MR. W. CURTIS GREEN, A.R.A., F.R.I.B.A., Architect.

UNIV. OF MICH.



Proposed New University Library, Cambridge.
Sir Giles Gilbert Scott, R.A., F.R.I.B.A., Architect.

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UNIV. OF MICH.

Stone House, Bishopsgate and Houndsditch, E.C.

MESSRS. RICHARDSON & GILL, FF.R.I.B.A., Architects.

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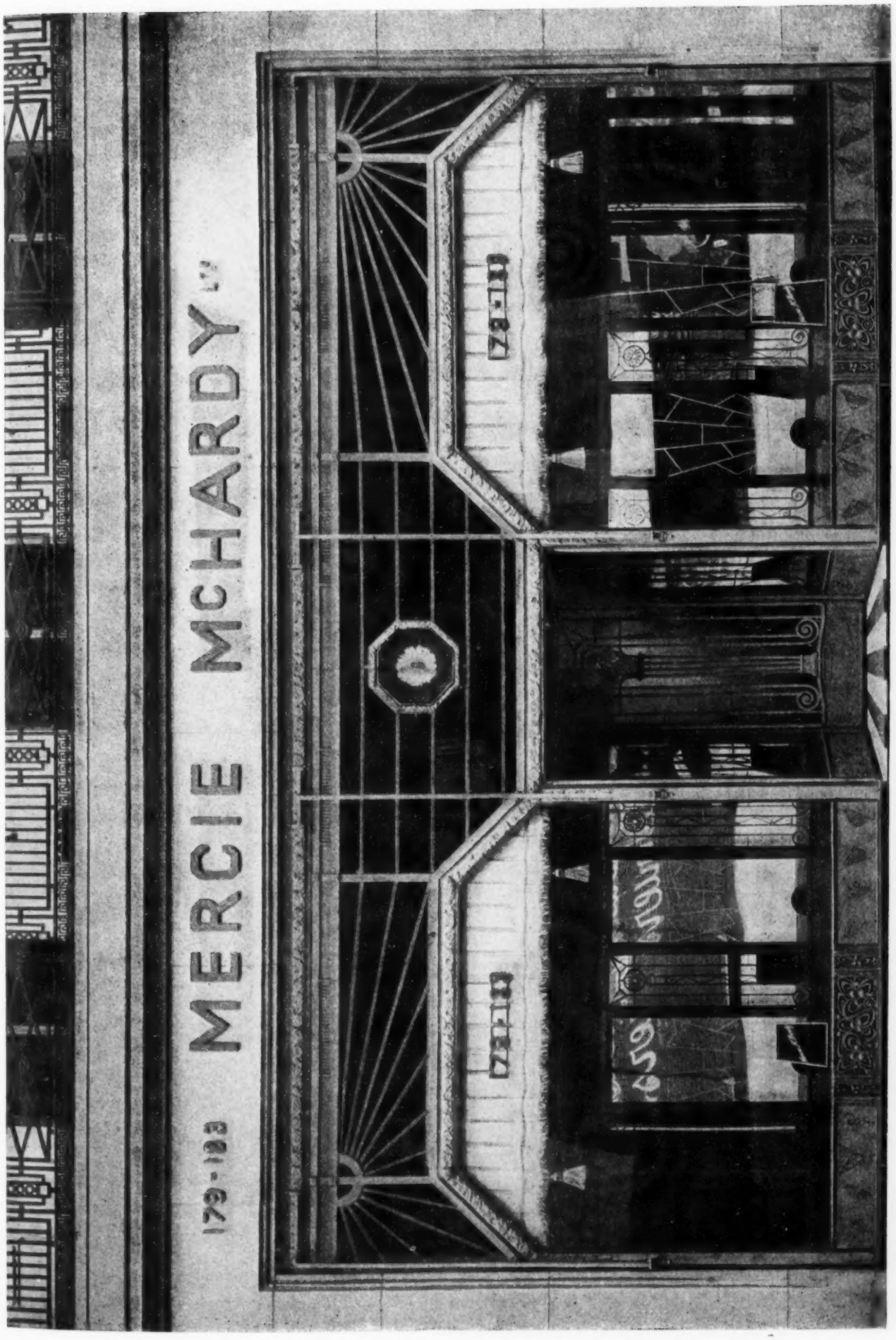

A New Shop Front in Regent Street, W.

MESSRS. YATES, COOK & DARBYSHIRE, Architects.

UNIV. OF MICH.

New Head Office of the Midland Bank, Ltd., Poultry, E.C.

SIR EDWIN LUTYENS, R.A., and MESSRS. GOTCH & SAUNDERS, Joint Architects.

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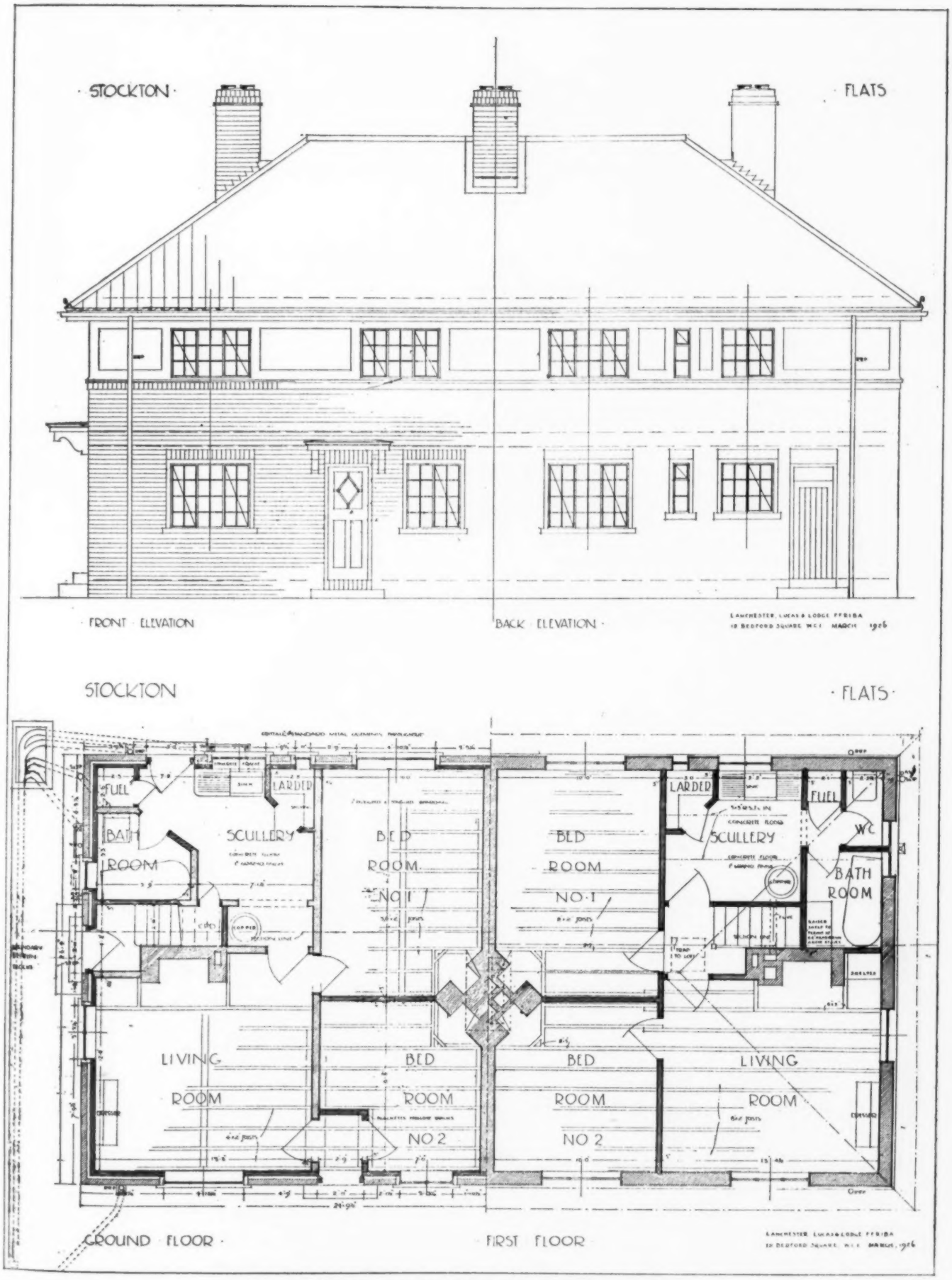
Design for Messrs. Fuller's Premises, Regent Street, W.: Smoking Room, Basement.

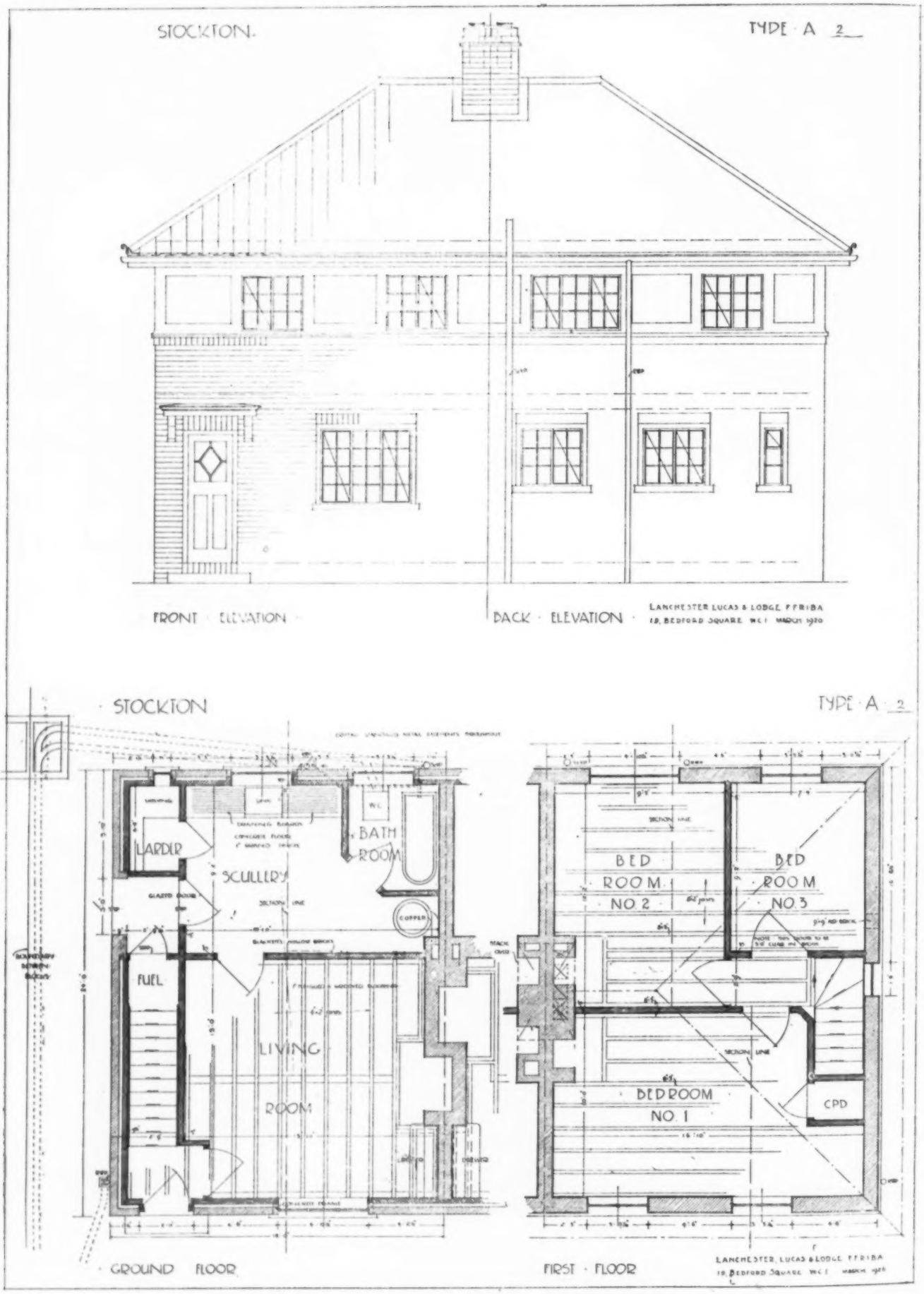
MR. STANLEY H. HAMP, F.R.I.B.A. (Messrs. Collcutt & Hamp), Architect.

UNIV. OF MICH.



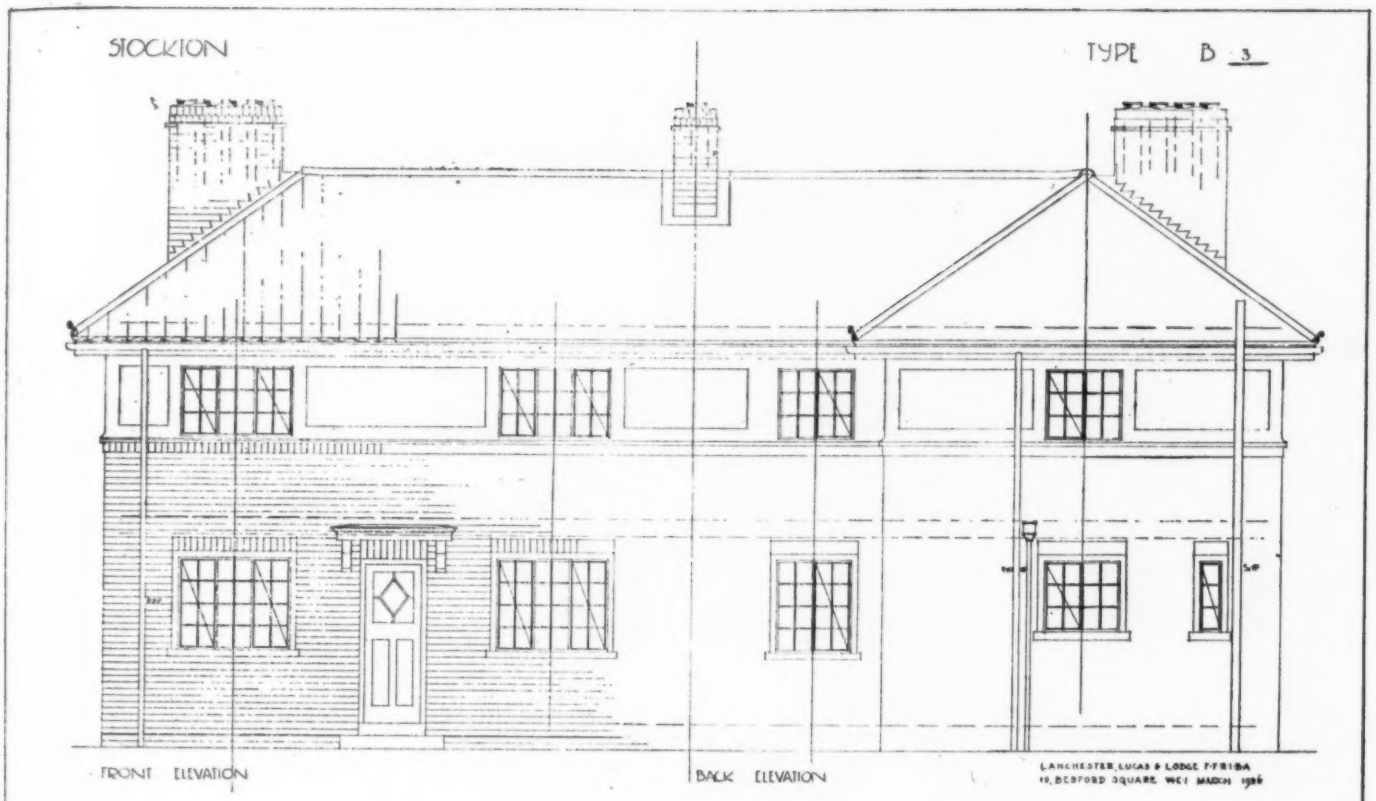
Mount Pleasant Housing Scheme, Stockton-on-Tees.

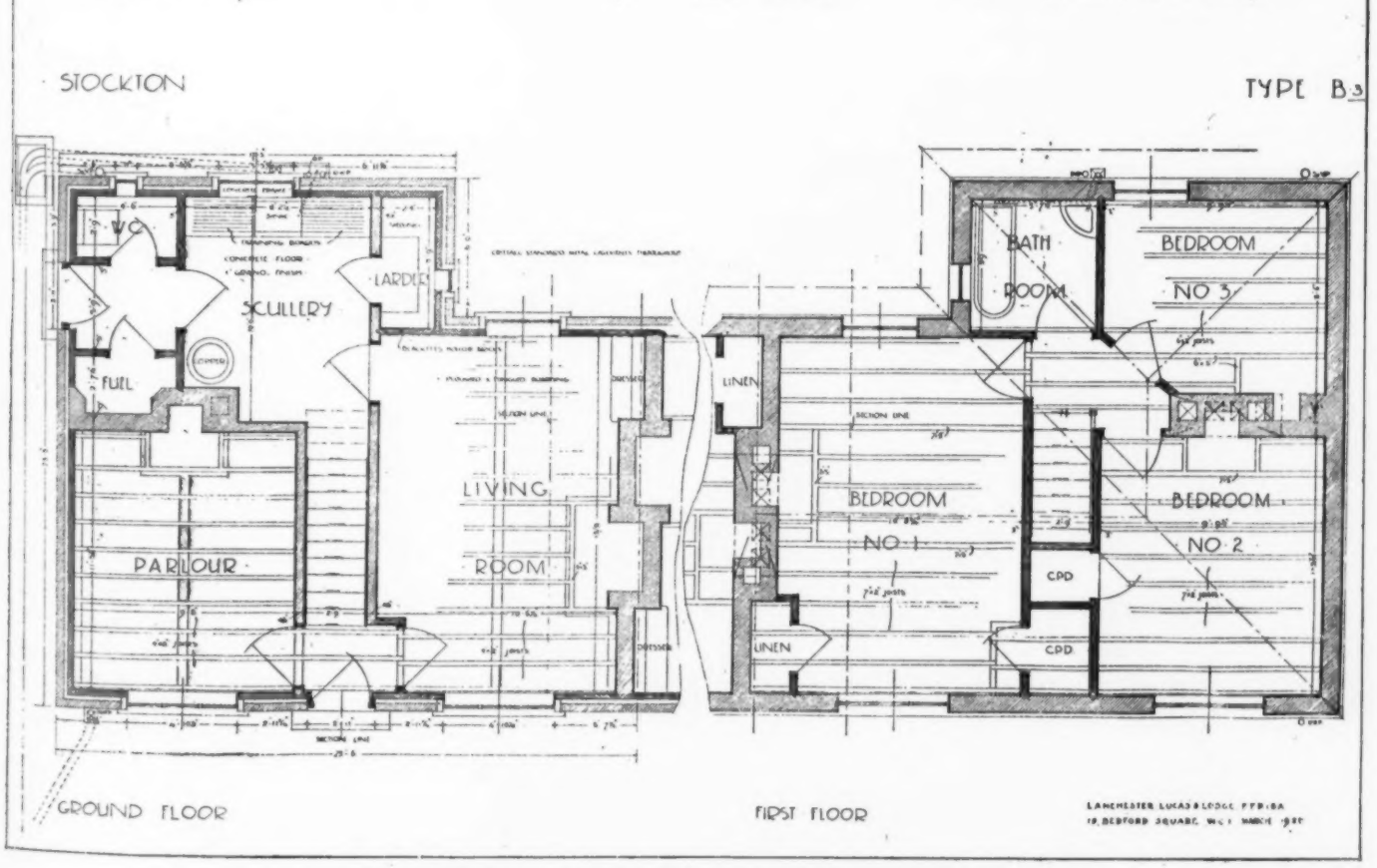
MESSRS. LANCHESTER, LUCAS & LODGE, FF.R.I.B.A., Architects.



Mount Pleasant Housing Scheme, Stockton-on-Tees.

Messrs. Lanchester, Lucas & Lodge, FF.R.I.B.A., Architects.





Mount Pleasant Housing Scheme, Stockton-on-Tees.

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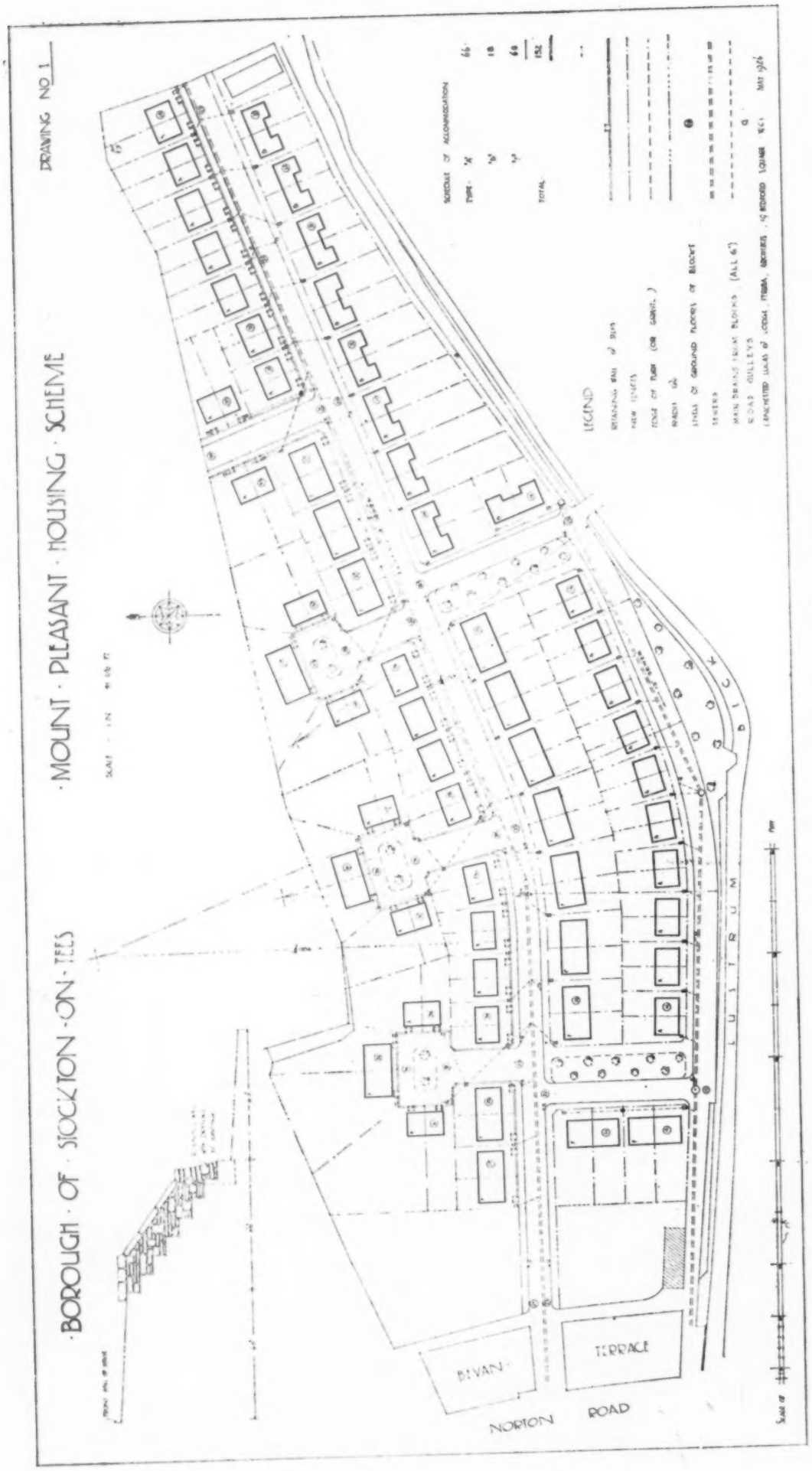
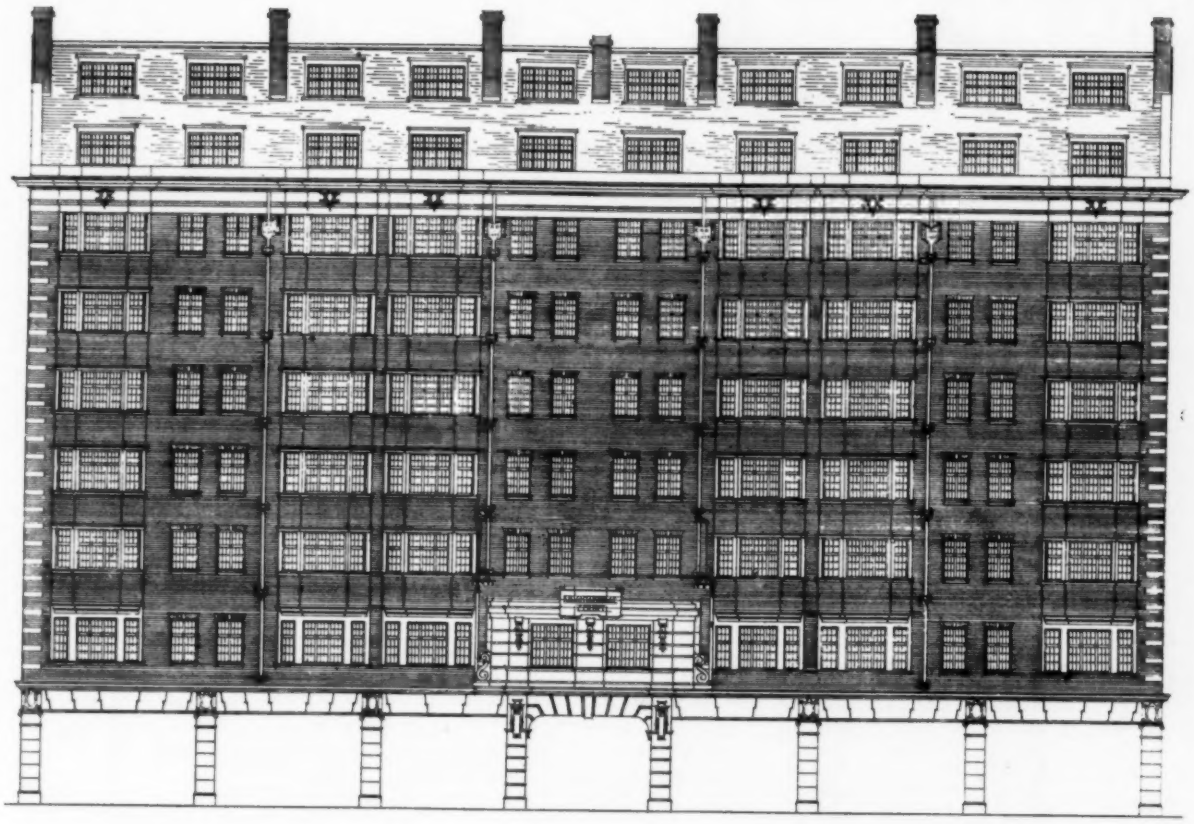
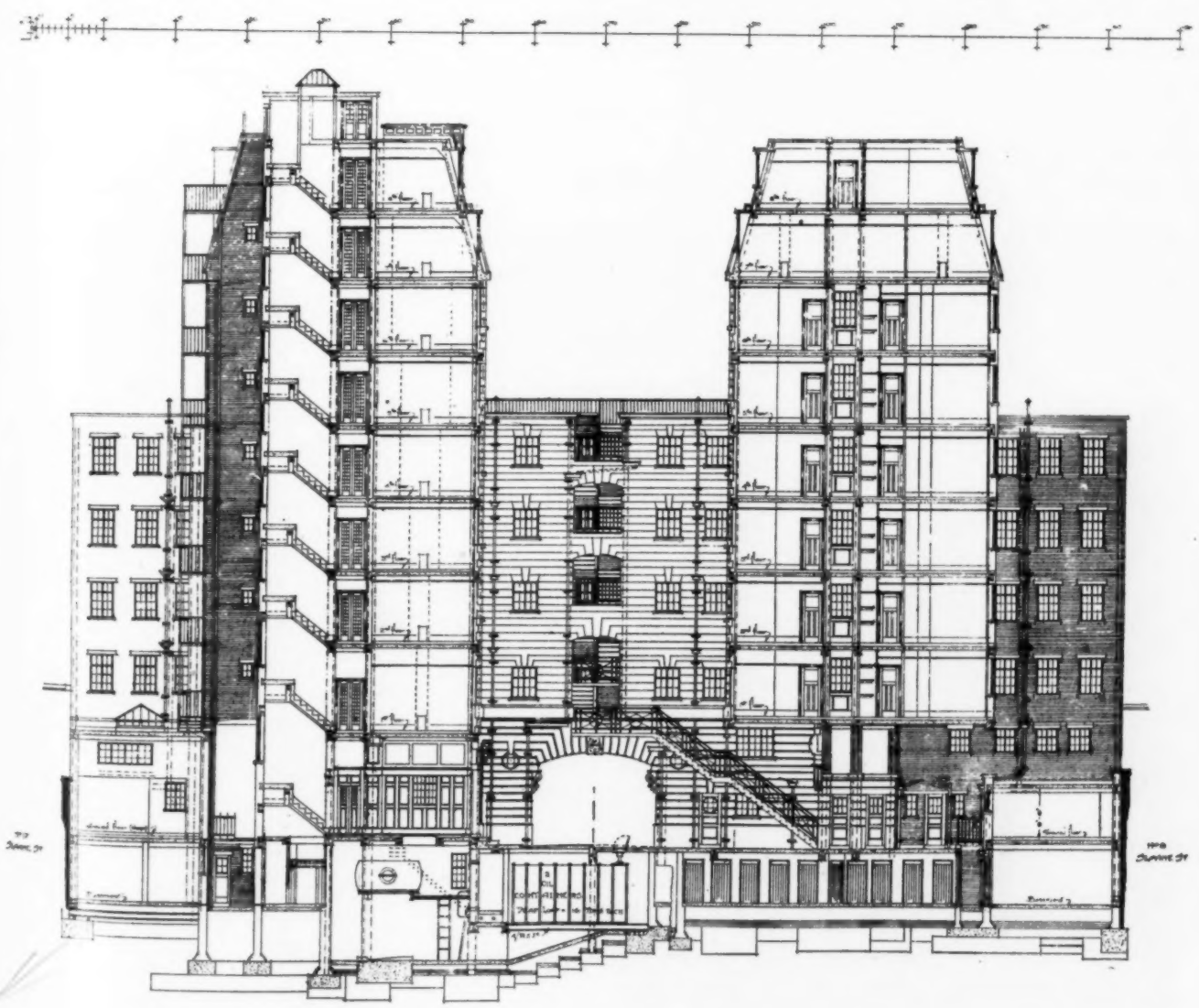


Mount Pleasant Housing Scheme, Stockton-on-Tees.

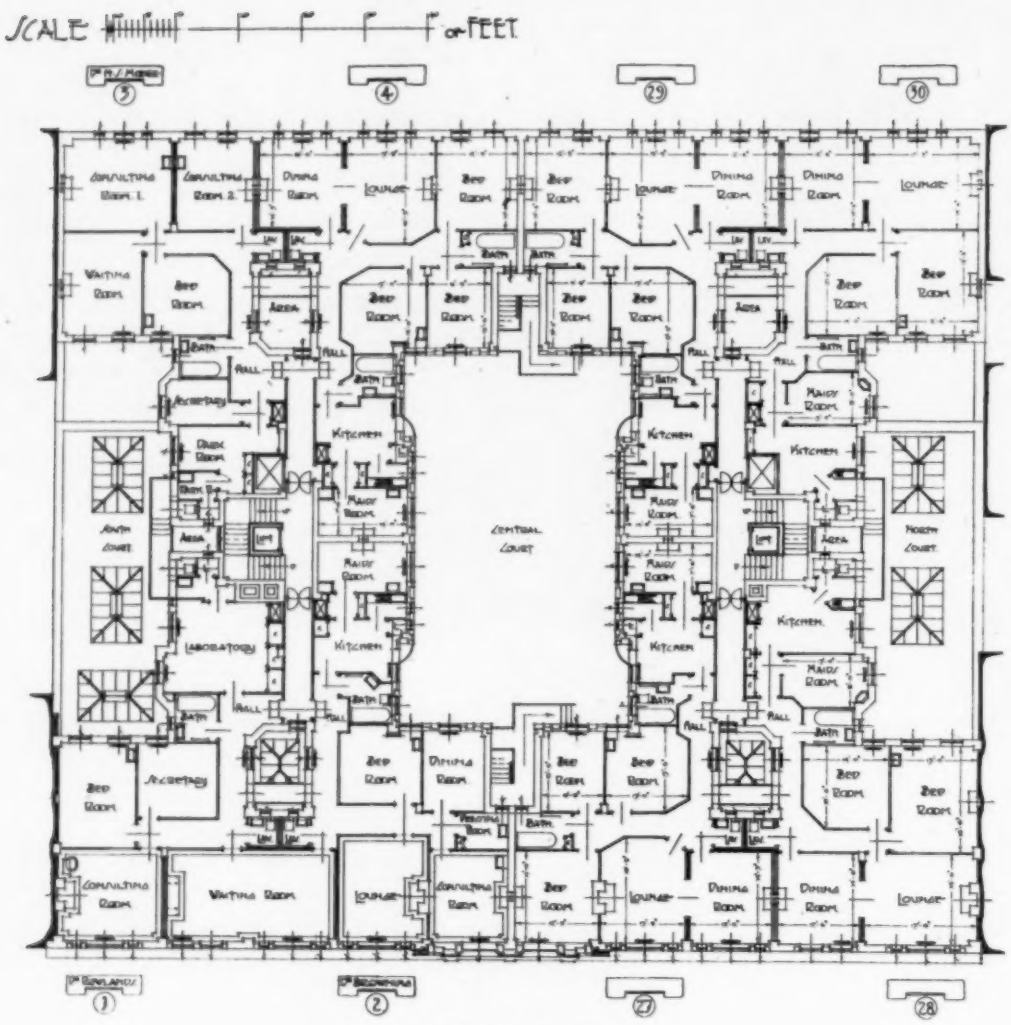
Messrs. Lanchester, Lucas & Lodge, FF.R.I.B.A., Architects.



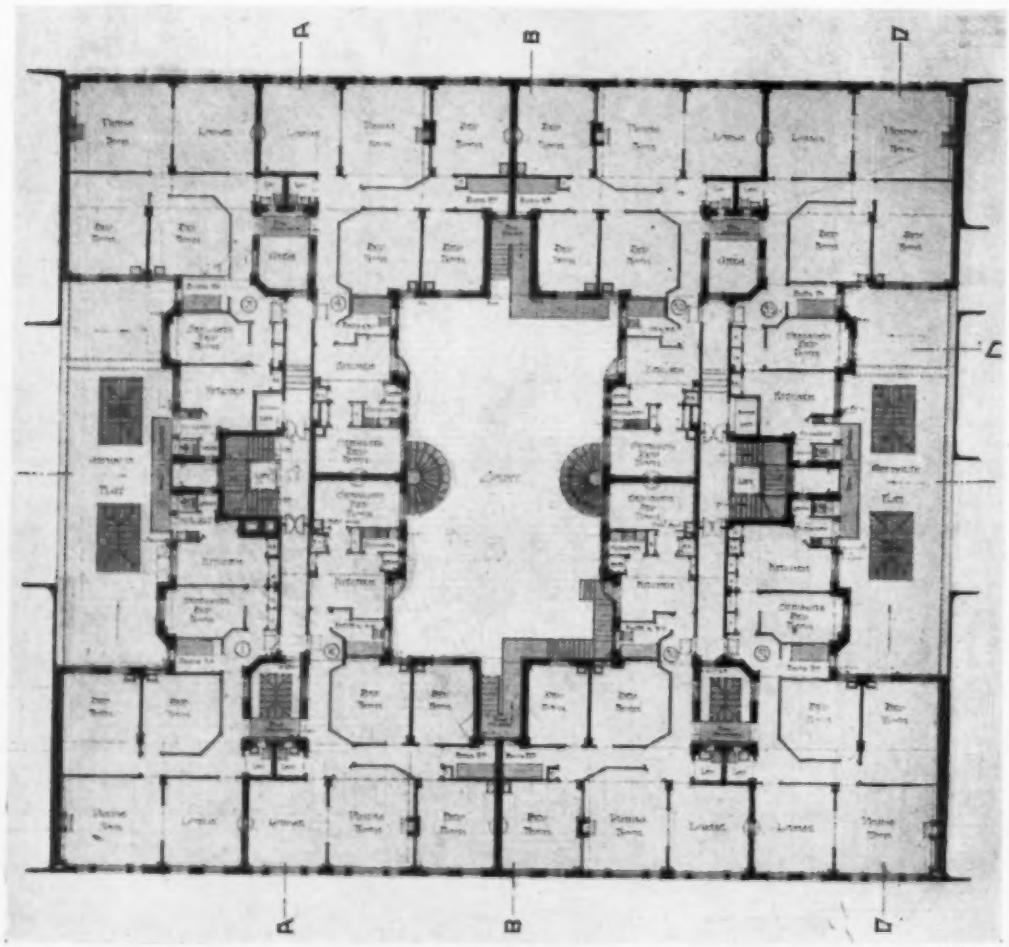


Knightsbridge Court.

MESSRS. DUDLEY NEWMAN and ELLIOTT, Architects.



First Floor Plan.



Typical Floor Plan.

Knightsbridge Court.

Messrs. Dudley Newman and Elliott, Architects.

THE BUILDING EXHIBITION

OPENING CEREMONY

The Exhibition was opened last Friday, at noon, in the Pillar Hall at Olympia in the presence of many architects and builders and those interested in the industry.

Lord Saye and Sele (the Chairman) said his duty that day was exceedingly simple. It was a great honour and privilege to come to that gathering. He was present at the last exhibition, and then made up his mind that he would never miss another one, for they were too good to be missed. It was a great pleasure to him to meet Mr. Tapper, and he (the speaker) was an hon. member of the Royal Institute of British Architects, which he considered was a very high honour. Mr. Tapper and himself were going to have somewhat close relations in the near future, as Mr. Tapper was doing something to one of his houses, and he should watch him very closely and critically.

Mr. Walter Tapper (President of the Royal Institute of British Architects) said it was a very great pleasure to him to be there, and it was very fitting that the President of the R.I.B.A. should have been asked to be there for the purpose of declaring the exhibition open. The R.I.B.A. represented the architects of our great Empire, men who were so closely and intimately associated with building and with building materials. Such an exhibition must be a tremendous asset and encouragement to the great building industry of the country, and it was, he believed, the fifteenth biennial exhibition organised under the same wise control of Mr. Montgomery, to whom they owed a very great debt of gratitude for bringing together such an excellent exhibition. Mr. Montgomery had told him that everything unconnected with building was rigidly excluded, and he (the speaker) thought rightly so, from the exhibition. It was very important to note that it was purely a business exhibition for business men, with none of the trimmings or side-shows associated with other exhibitions. Mr. Montgomery plainly indicated that his main purpose was to show how building materials should be used and what were the best materials for different purposes. That was a very important thing to-day. He was sure such an audience as that gathered before him deplored what went under the honourable name of building throughout the countryside. He did not think any one section of the community was to blame for what had happened. He believed the people who owned such mean and ignoble buildings were really lacking in education. The want of education was the real cause of the trouble. It would, he thought, be found that by far the majority, if not all, the badly designed buildings and buildings in which bad materials were used, were built by people who were ignorant. That was the trouble to-day; of that he was perfectly sure. Up to the 18th century the layman, or, as we would say to-day, "the man in the street," had a knowledge of architecture—not a technical knowledge, perhaps, but still he knew the elements of the subject. Now the man in the street did not possess that knowledge. They all knew that really good architecture was being done to-day, but it was not universal. To-day there was no universally great building, and the reason was that architecture was not taught in the schools. Fine art should be part of the general education of the people, and every school in the country should have a simple but good text-book on the subject. It was not the technicalities of building that the layman should be desirous of acquiring. That was not necessary, but the layman should know what he would call the essentials of good building; good proportion, decent woodwork, and so on. That was the burden of his song to-day. He was not the least bit of a pessimist, and in fact he was a great optimist. He did really believe there was a great future for the building industry of this country, and a great future for architecture—if it were taught. That was the thing which mattered. It must be taught, and be part of the education of their schools, so that their children when they grew up would have a desire and longing for the best. If all of them individually and collectively belonged to institutions such as his own, which was doing a very great work with regard to education, they would get on. That was what was wanted all over the country. Everyone could do some good by persistency, and by keeping on talking about the fact that education was the thing which mattered. They should press on those who had jurisdiction in the educational authorities of the country how extremely important it was that the people should be taught and should know. He viewed himself, and they also would view with grave concern the disappearance of all those delightful minor handicrafts of the country, not only because of the crafts themselves, but because of the happiness and delightful contentment they brought to the workers. They all knew if they did a thing individually what a great pleasure it gave a man or woman to do a really good thing. That was the case with them and in other countries till a short time ago, but to-day it was no longer so. How it was to be brought back again in the face of the great question of mass production he was not at the moment prepared to say, but it was essential for the nation that something should be done. He had the greatest pleasure in declaring the exhibition open.

Mr. Herbert Williams, M.P. (Parliamentary Secretary to the Board of Trade) said it was his privilege on that occasion to move that the best thanks of the assembly be given to Mr. Tapper, the President of the R.I.B.A., for the honour he had done

A General View of the Exhibition.

the exhibition by performing the opening ceremony. Mr. Tapper had expressed his views to them very clearly, and they were views which one would rather expect from him. Mr. Tapper built mansions for their souls, if he might use such a phrase, but he also took into account the needs of their bodies. It was their bodies he had been considering to-day, rather than their souls, which he considered when designing beautiful churches. He believed in that Exhibition there was a stand by the Gas Light and Coke Company which Mr. Tapper had designed. Mr. Tapper had spoken of the house beautiful, and he agreed with him, but what the nation wanted at the moment was the house numerous. The most appalling social problem with which the country had been faced of recent years was the shortage of houses, and any house was better than no house. He received letters written by people in the country about the bungalows erected, and he agreed that some of them were not as beautiful as they might be. But do not let them be too hasty. They were all so conservative that they hated a thing the first time they saw it. They must remember that these houses had not been clothed with creepers and trees, and many which to-day were thought ugly would look quite nice in a few years' time. It always amused him to watch people admiring the ancient, however ugly it might be. However, he did not want to be too much controversial. They would realise that the aim of the Exhibition was to help solve the great problem, and in regard to that very great progress had been made. The year just ended was unique in the history of their country, for those engaged in building were breaking their necks to complete houses to get the full subsidy, and there were more houses built in one month before the end of the year ending September 30 than in any similar period previously. But the present year was the real testing time for the building industry. In many parts of the country supply was approaching demand so far as mere numbers were concerned, and yet for those who desired the house beautiful the demand was limitless. But that demand had to be made on terms that people could afford to pay. That was really the issue they were up against. Give people education—yes, he agreed; but education if not associated with a sufficiency of the wherewithal would not get the houses which were required. The building industry was now face to face with the most difficult problems since the Armistice; a time when price was going to count rather more than it had done in recent years; when there was going to be a closer relationship between capital cost and economic rent that people could afford to pay. Everyone in the industry should realise whether they were architects or builders or workpeople. It would be interesting to see what was going to happen in the next few months. It was going to be a really critical time for the building industry. Personally, he was optimistic, and he thought in a few years' time they would see many "To Let" notices. Even now they saw a few "To Let" notices. Mr. Tapper, by coming to open the exhibition, had given it the endorsement of his great position, and Mr. Montgomery, by organising it, was doing something to help forward the solution of this great housing problem, and he had great pleasure in proposing the vote of thanks to Mr. Tapper.

Mr. Fred Thorne (President of the National Federation of Building Trades' Employers), seconding the vote of thanks, said he had heard Mr. Tapper speak on more than one occasion, and he was very glad to know that he was all out for education, and they all agreed that education was as necessary in the building industry as in any other. He, like Mr. Tapper, would be delighted to build (at a price!) such cottages as were found in the Cotswolds, the half-timbered houses of Worcestershire and Cheshire, and he would not mind building wattle and daub, or clay, or thatched cottages such as were to be found in his own native county of Devonshire. But the Government had been up against the problem that the builder had demanded such a high price for his work and materials that it was impossible to have any improvement on the design or standard of small houses. But he believed the time had arrived when there would be such a difference in building costs that they would be able to give something a little better, so that people would be able to put down £10, borrow a further £90, and so cover a deposit that would enable them to purchase their own house within a period of ten, or at most fifteen, years. One was glad to note the spread of a feeling that the housing subsidy should be stopped. To-day the prices for houses were about one-third of the prices of eight or ten years ago, and, if that was so, the time had come when local authorities should give a subsidy in the shape of an improved standard of house rather than in the shape of utility. He had attended the Building Exhibition on many occasions, and was grateful to see such reduction of prices, even after such a short period as two years. Things of utility and artistic merit could now be bought at prices that were not extravagant. If there was one thing more than another for which they should be grateful it was that the exhibition gave an opportunity to the buying public to see the things for themselves without the necessity for going all over London and the provinces to visit showrooms, or buying from catalogues, and then more often than not buying the wrong thing. He hoped the exhibition would be flooded with visitors ready and willing to understand and with the object of buying.

Mr. Thomas Barron (Secretary of the National Federation of Building Trades' Operatives) supported the vote of thanks. The building trade workers had, he said, a very great respect for the architect, a respect perhaps tempered with fear, for the architect was a very distant personage when he went upon the job. But in these later days the workers were honoured by the interest the architects, and particularly the Royal Institute of British Architects, were taking in their welfare, especially from the educational point of view. The workers were very grateful indeed for the help they had received from the R.I.B.A. in that direction. He had that morning had a glimpse of the exhibition, and he had to admit that he sometimes had a feeling of regret at seeing science and mechanics being so much developed in their old industry. He still believed, in spite of all the great advances in science and mechanics, that they still required craftsmen in the building industry. They had only to look at some of the later buildings in this country to see that in spite of the worship of the ancient they still had workers equal in skill and art to the men who built the ancient structures that Mr. Tapper was doing his best to preserve. In that respect he would ask Mr. Tapper not to be too keen on preserving some of those old buildings, but to remember that the builder and his craftsmen of to-day must live, and that the architectural profession of to-day had also to live. He was interested in Mr. Tapper's remarks about the kind of building now going up throughout the country, and wondered if it had occurred to the ordinary observer what was the feeling of the good craftsman who looked upon them. It would break the heart of a good craftsman to have to carry out some of the bad work on these modern houses. But he agreed with Mr. Williams that when it was remembered that about 75 per cent. of the population were badly housed, he was for houses of any kind. In Scotland there were houses in some of the country districts and mining districts that would break the heart of any decent person living in them, and personally he did not care whether the new houses were artistic provided they were built and gave a cover and some sort of decency for the inhabitants.

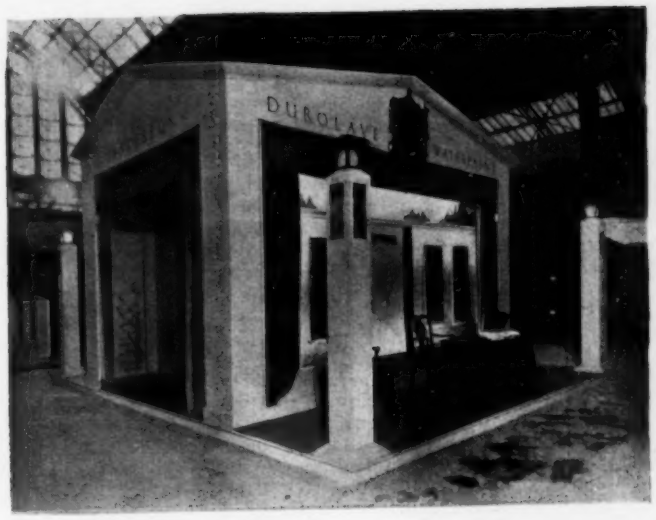
Mr. Tapper replied briefly.

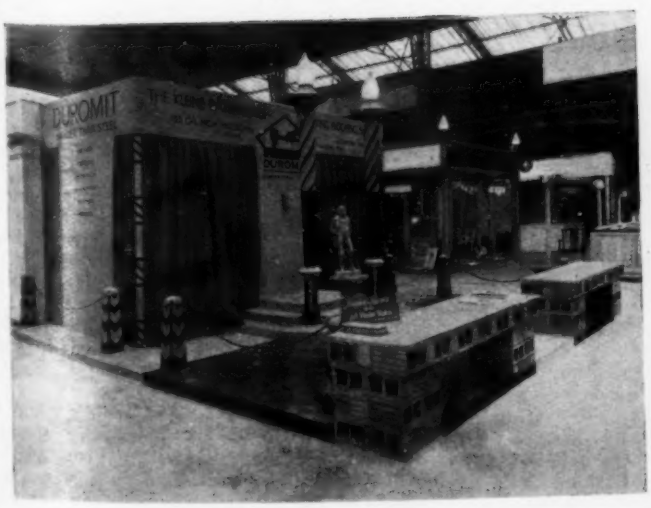
Sir R. Allison proposed a hearty vote of thanks to the Chairman, and said that all of them who were concerned more or less intimately with the great building industry, the activities of which were so well and comprehensively demonstrated in that Exhibition, would appreciate to the full the help and support of such an eminent person as Lord Saye and Sele.

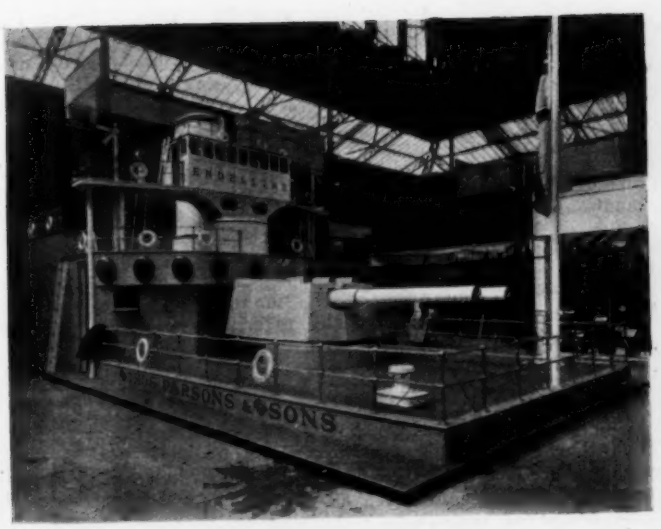
The motion having been carried.

The Chairman thanked the mover, and said he felt proud to be associated with the building industry.

A Stand at the Exhibition.







SOME STANDS AT THE EXHIBITION.

A GENERAL SURVEY

The Building Exhibition is full in all parts with the most interesting display yet staged in the great building at Olympia, and it can be truly stated that those engaged in the industry who do not make a visit will be missing many unique features and be financial losers, for a comparison of prices will show many surprising reductions. The most noteworthy addition to this year's exhibits is the architects' loan collection of antiques (referred to in detail on p. 666), comprising some 200 exhibits of furniture and pottery, and valued at over £20,000. One of the exhibits is a brick from Ur of the Chaldees, which, according to the catalogue, is dated 2000 B.C., showing that not only were the men of that period versed in the art and science of building, but were also wonderful prophets. Opposite this exhibit of antique furniture is a display of modern furniture, chiefly designed by C. A. Richter and H. Davis Richter, and carried out in Italian walnut, palisander, sycamore, and oak, with carvings cut in limewood, after the Grinling Gibbons' style. Also in the gallery are many excellent examples of handicraft by students of various London and provincial Polytechnics, which afford promising indication that the skill of the ancient craftsmen is being fostered in the younger generations. (These are also dealt with specially elsewhere.) The architect is generally looked upon as a careless and untidy person, in an office; drawings and documents are usually missing when urgently wanted, but chaos can be reduced by the use of a vertical file, that can store flat some 1,000 drawings and provides a table for reference or use as a drawing board. The lighting of country houses is always a problem when public services are not available. A new invention is shown which, applied to lighting, automatically draws kerosene from a container, outside the building if necessary, and incandesces a mantle by self-generated pressure in the vaporised oil of about 20 lb. per square inch. Safety is assured by the fact that the oil supply is under vacuum, not pressure, therefore any leakage in the service results in air influx and not oil outflow.

It is an accepted principle that in a new house the architect must design the drawing room to the daughter's requirements, and the kitchen to the mother's requirements. In kitchen design and arrangements great improvements have been effected since the war, the most notable improvement being the superseding of the old and cumbersome type of open dresser and cupboard, by the modern kitchen cabinets and culinary furniture. The kitchen cabinets are models of compactness and efficiency, containing all the necessary gadgets required in the culinary art, and when not in use are entirely enclosed.

The recent flooding of the houses on the Thames side reminds one that cellars and basement floors not drained into sewers should have some means to eject any water that may accumulate, and a new type of pump exhibited is designed to operate automatically by electricity when water accumulates, and immediately ceases action when the water has been disposed of. No doubt the fall in the price of rubber will eventually reduce the price of the manufactured commodity which at the present is very high and precludes its use in private houses. Meanwhile, the range of rubber floor coverings is increasing, and art colour schemes can now be supplied inlaid without any visible joint.

The other day a lady wrote in a daily paper to the effect that the various craftsmen must be in league with each other, for the carpenter constructs a double-hung sash in such a manner that when the cords break the work entailed in replacing a new cord means that the paintwork is damaged, necessitating new decorations to the windows, which in turn do not match the remaining decorations, and finally resolves in the whole house being repaired and redecorated all through one broken sash-cord. There are many alternative methods of hanging or fixing double-hung sashes in this Exhibition, any one of which would, if adopted, avoid the trouble of broken sash-cords, or if the old type window is preferred a suitable type of chain will be found exhibited which will carry the sashes through their trials and troubles from one generation to another without attention.

It has been mentioned previously in the Builder that cellulose paint will no doubt be largely used in the building trade in place of the ordinary paint now used, the chief reasons being its durability, quick drying, large covering power and easy application. Many firms are exhibiting this paint, and it can be obtained practically odourless, non-toxic and non-inflammable. It will dry within 10 to 20 minutes, and become hard within an hour of application, this hardness increasing in course of time. It is unaffected by alcohol, soap, heat or scratching, and is thoroughly hygienic. It can be applied by brush or spraying. Spraying with this paint gives satisfactory results, in fact, it is thus applied to motor cars, etc., but a light portable spraying machine at small cost will be required for general painting of buildings in place of some of the machines now on the market. No doubt these will be included in the next Building Exhibition. This paint, when applied with the brush, will dry without brush marks on any smooth surface, and can be finished with a matt or glossy surface, in any desired colour or shade. One of the novelties of the exhibition is the metal wall tile, treated with this type of paint. Made in all sizes of the modern tile, these are fixed in the ordinary way in cement on a cement-rendered backing, and each type being of a uniform size, there is no irregularity in the joints, whilst the colour schemes are very effective. As the price is very reasonable, this type of tile will, no doubt, be largely used where economy is essential. Another metal wall tile which is stuck on in sheets is displayed, and many of the designs and colours are very effective.

Turning to the older type of tile, new and charming colour schemes in wall tiling are shown, whilst at one stand are displayed hand-painted tiles for bathrooms, restaurant tables, etc., animal and bird designs being a speciality; a novelty in tile and panel design is to be seen at the Asbestos Cottage. This cottage, composed of materials which a few years ago were considered suitable only for the factory type of building, is charmingly set off by the garden floral display. A new feature is the plain tile roof, the asbestos sheets being turned at the edge to give the thick appearance of the ordinary tile. Another type is the pantile, having the effect of substantial thickness and being made in sheets of 16 tiles to each sheet, they are quickly and easily fixed. An exhibit using asbestos or corrugated iron as an external covering is the standardised steel building frame designed to meet the need of cheap garages, workshops, etc. The roofs are in standard spans of varying lengths, whilst for large buildings requiring clear spans up to 120 ft. a special type of roof has been designed.

For light and quickly constructed walls there are many excellent substitutes shown to take the place of the usual brick or stone. One type provides a wall having an impervious exterior face and a porous interior face, perfect diagonal bonding and continuous vertical cavities. For good-class buildings reconstructed Portland stone is used on the exterior and the interior finishes are obtained by the use of blocks faced to give various effects of marble, granite, etc. Concrete tiles for roofing purposes have all the effects of the ordinary plain tile. Concrete blocks are also assembled to form lintols of various lengths, reinforced by steel rods and grouting.

The heating section is well represented, and the old type of kitchen range has been practically displaced by the modern and compact cooking range. Independent boilers for coke or other fuel with a heated storage capacity of from 25 gals. upwards are in great variety. An automatic water heater (gas operated) is also shown, which supplies unlimited hot water to various points by simply turning on the requisite tap. An arrangement has also been devised whereby the hot water system can be either worked by an ordinary fuel boiler or by the gas heater, when the latter is not in use, without any addition to the hot water system. For the reception and other rooms an endless choice is opened up from the inexpensive to the costly works of art, for the design of modern mantels and fireplaces is due more to the inspiration of artists than was formerly the case. Rustless steel is a modern production, and costly at present, but many fine examples of craftsmanship are exhibited; one of the most interesting stands is that displaying hand-wrought ironwork of ancient and modern architectural designs. There are many artistic reproductions of early door knockers, latches and firedogs, etc. An old-fashioned fireplace is shown complete, fitted up in early style, whilst another exhibit is a sword poker, the handle being the figure of a Roman soldier entirely hand-chiselled. A novelty is a trivet made from an old horseshoe, the luck holding if you don't upset the kettle of boiling water over your foot.

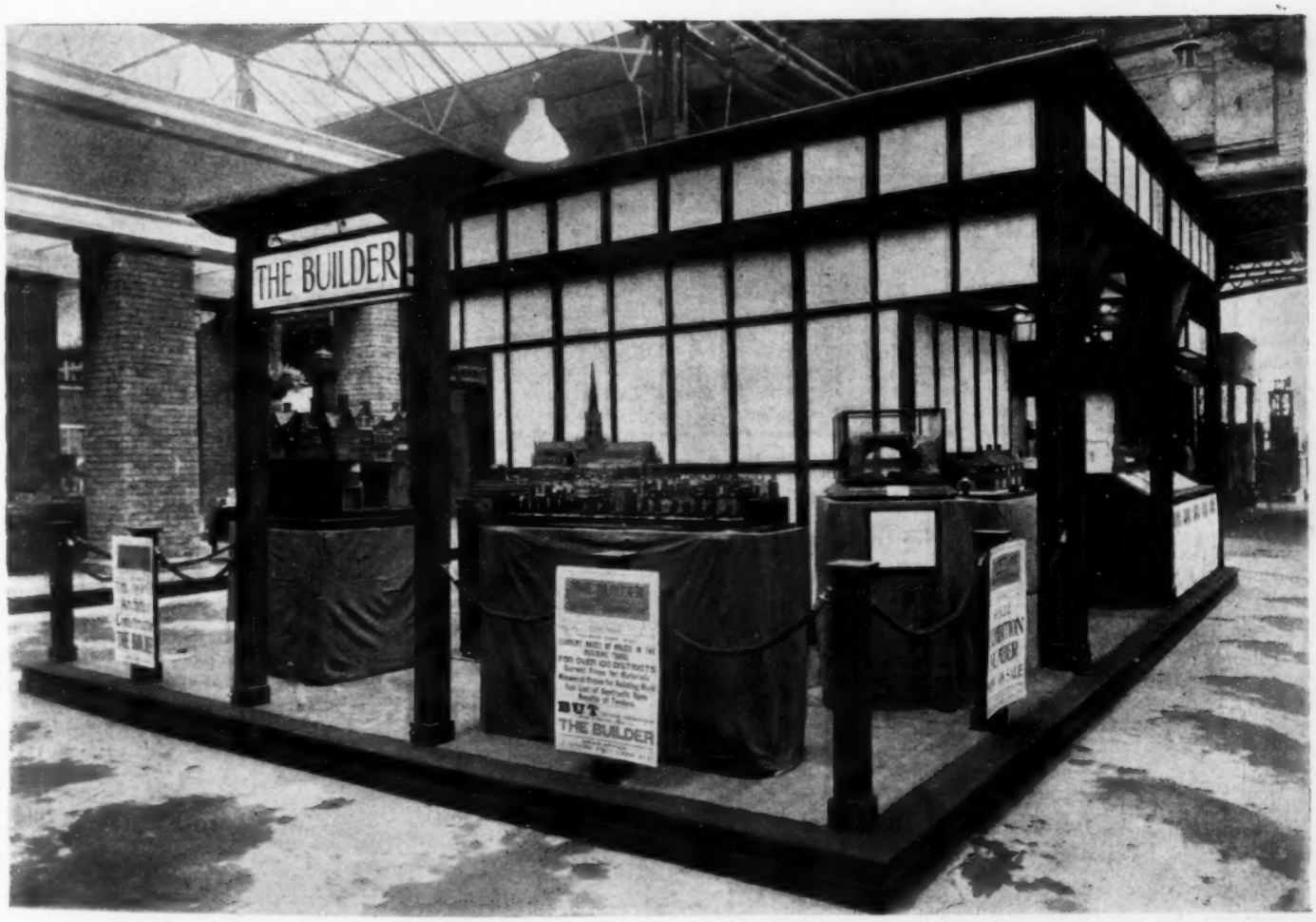
An interesting display is seen of internal wall and ceiling decorations, suitable for public and private buildings, in paper stucco decoration, a material which is said to be fire-resisting and designed to take the place of heavy applied plaster. It is cheap, extremely light, easily fixed and can be painted or decorated in any effect directly the material is placed in position, whilst its durability can be seen by the condition of similar material fixed in Olympia some thirty years ago. Another effective decorative material, though of a different nature, is the display of engraved glass and electric fittings. The deep engraving of the glass gives a most remarkable effect, whilst its adaptability for effective window and showcase display is practically unlimited.

Probably the most striking novelty in the exhibition is the glass dancing floor. This floor is constructed in squares of opaque glass 2 ft. 6 in. by 2 ft. 6 in. and 1¼ in. thick, supported in flush, narrow frames upon similar springing to that employed for wood floors, and illuminated from the underside by numerous coloured electric lamps. A large spring floor has yet to be carried out, but the lighting effect over a large surface in a dimly lighted dancing hall should be exceedingly effective, whilst the dancing surface is in every way equal, if not superior, to the ordinary wood floor.

There are many exhibits of joinery, from that executed in the most expensive woods to the more modest examples for housing schemes. One exhibit is interesting, as it demonstrates that although the joinery produced is as cheap as any on the market, yet the stairs do not creak when used, neither do the casement windows allow water to penetrate, the fanlights, which are top hung, being protected at the top by a special rebate and throating. This is a small thing in its way, but one which, if generally adopted, would have proved a boon to the multitudes who have to suffer the discomforts of wet driving through a faulty fitting or window.

As with other phases of building and design, the bathroom is undergoing changes, and the old enclosed bath is coming into its own again, but dressed in modern garments of brevity and simplicity, in the form of a square, flat-rimmed porcelain bath enclosed on one or more sides and ends as required with enamelled iron enclosure or marble, etc., screwed into position so as to be easily removed for repairs. An excellent

The Adamite Company's Stand.



"The Builder" Stand, Main Hall.

substitute for marble is the new lustrite marble, a durable and economical synthetic marble having all the varieties and beauties of the rarest natural stone, with a perfect natural polish and being impervious to moisture.

A new feature is the exhibit by the Empire Marketing Board, arranged with the object of bringing into wider use in this country the numerous, though little known, timbers of the Empire. The United Kingdom depends almost entirely upon imported timber for structural and ornamental uses, and the larger part of imported timber is derived from foreign sources. With a wider knowledge of the character and uses of Empire timbers there is no doubt that a demand for them would arise, to the benefit of our Empire in general. Inquiries at some of the stands exhibiting timber will prove that many of our Empire hardwoods are much cheaper than foreign hardwoods of a similar character.

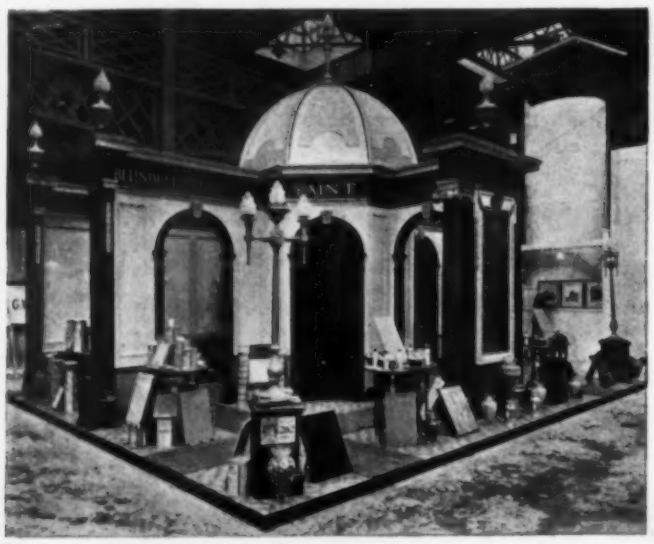
We must all feel that a tribute of appreciation is due to the enterprise and thought which have created so varied an Exhibition. It would appear that exhibitors realise now it is worth while to spend some effort to put their goods in as favourable a way as possible with well-built, well-arranged stands and pavilions. The days of a hastily arranged collection of boxes and draperies are gone, and one exhibitor vies with another in making up an attractive show for the public. The most satisfactory effects are those where pavilions are built up to display the good qualities of bricks and tiles, for architects are still asked to make designs which strikingly illustrate the good texture and colour of bricks and tiles, as in the pavilion with a steep roof and recessed sides and twisted pillars by Messrs. W. T. Lamb and Sons, designed by Sir Aston Webb and Son. Other effective pavilions of this kind are those of Messrs. Thos. Lawrence and Sons, The Binfield Brick and Tile, and Rippers, Ltd., pavilions. The colour effect of Messrs. Crittall's stand, with its brightly decorated angle piers, is one of the most striking stalls. The delicacy of colour in the "Durolave" stand of Messrs. Sanderson is what one might expect to find in a ladies' reception room, but the wonderful, painted panel designs find in this setting a good display of their qualities. Whilst we do not consider that the best has yet been done to bring out the qualities of most of the exhibits, it must be apparent in each succeeding exhibition that the only real way to draw attention to many materials is in some form of constructional exhibits which display the good qualities of the materials. One of the most striking displays is the large pavilion by The London Brick Co. Such a display of Flettons has never been shown before of the possibilities in texture and colour.

We miss the formerly telling effect of the Kleine Flooring exhibit, but the simpler affair to-day with two outstanding pillar lights is a very pleasantly arranged colour scheme. An important feature of this exhibit now is "Duromit," a wonderful development of durable paving.

We do not suppose there has been an exhibit of modern furniture and decoration quite equal in originality and charm to the pavilion of the Bath Artcraft Co. A central hall with a nicely designed dome ceiling and four detached reeded columns leads through to some ten other rooms. To describe fairly the details of these beautifully furnished rooms would be beyond the space at our disposal. The dining-room, with canted ends, has walls of a delicate stone colour with white frieze above, crowned by a dainty modillion cornice The carpet is a pleasing shade of grey. The fine circular table, made of wood of an agreeable salmon shade, is panelled out for twelve places. The electric light comes up through the open pedestal frame of the table in the centre, and illuminates a circle of flowers. A pleasing feature of the decorative effect is the wall panel decoration by Mr. Davis Richter. In the long parlour a rich scheme of decoration is carried out, with green painted panelling and nicely enriched plaster cornice. Reproductions of old work in walnut and mahogany give colour and quality, and in a room like this Mr. Davis Richter's richest colour pictures seem to find a happy home. Of the four bedrooms, we like best that with Bombay rosewood furniture; another is furnished in white sycamore, and another with Amboyna. Much refinement and charm of colour are shown in these rooms. On the south side of the entrance hall are a Queen Anne library in Italian walnut, and an oak room. The oak room has a remarkably pretty effect of lighted glass pillars on the overmantel. A number of cleverly designed mantelpieces and fireplaces by Messrs. Froy, of Hammersmith, complete this remarkable exhibit.

Amongst other stands of unusual merit, apart from those we illustrate, are the Drytone, the Leeds Fireclay Co., the Sika, the Red Triangle brand of cement, and Messrs. Doulton and Co.

There are some interesting samples of wall construction, but there is little dealing specially with cottage design. We should have liked to see a full-sized exhibit of a brick cottage, or a pair, showing what is possible as to setting a really well-proportioned building with a thoroughly economical treatment and finish. Something of this sort ought to be a standing feature until the public come to realise the possibilities of having a modern cottage equal in the charm of quaint and pleasing design to the old work, and with all the valuable details of good sanitary work. We have glanced over a few points of the exhibition, but it is only by a little careful personal scrutiny of its varied contents that the visitor can properly realise its strong appeal.



A Stand at the Building Exhibition.

STANDS AT THE EXHIBITION

We gave last week a series of detailed notices of interesting stands at the Building Exhibition, and we now give a second and concluding survey.

"The Builder" Model of the Keep of the Tower of London.

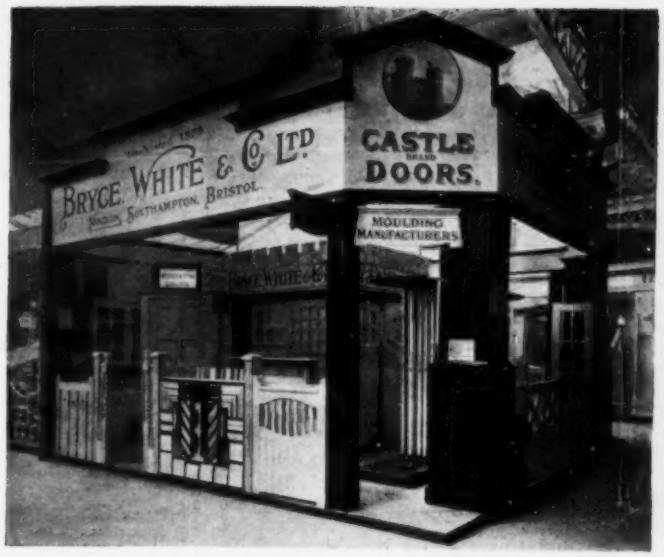
The Builder model of the "White Tower," or the Keep of the Tower of London, which is now on exhibition at our stall, No. 231, Row N, at the Building Exhibition, was illustrated in our last issue, p. 610. All the drawings for the model were prepared for us by Mr. J. P. D. Saul, architect, and the maker of the model was Mr. J. B. Thorp, Gray's Inn-road, W.C.

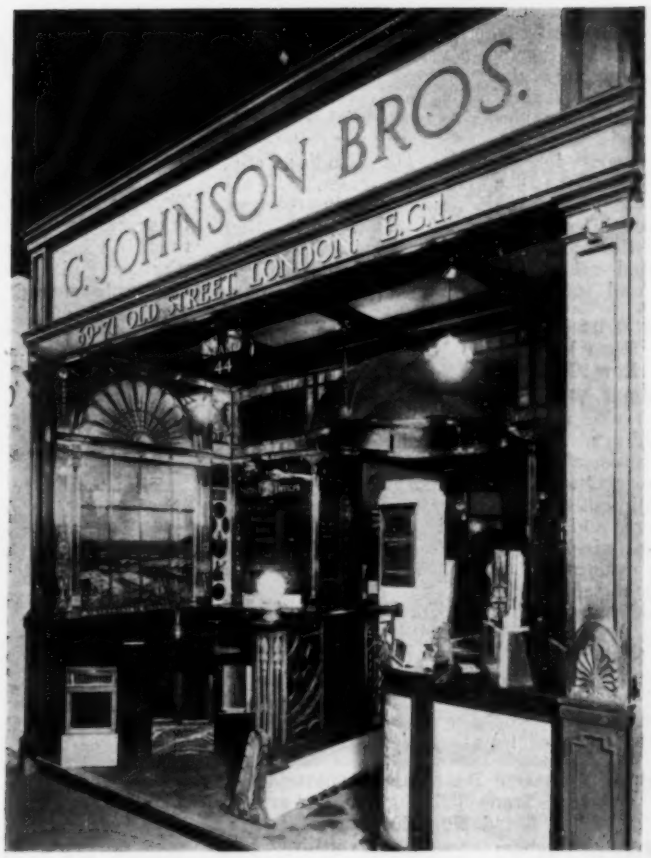
Boulton and Paul, Ltd. (Norwich. Branches at London, Birmingham and Sydney). **Stand No. 104, Row F.**

Joinery, etc.—Many excellent types of standardised joinery are exhibited by this firm, who specialise in panelled doors, sash doors, single light and double-hung sashes, stairs, gates, bay windows, mantelpieces, dressers, etc., all work of quality at competitive prices. Although the firm make a strong feature of their ability to supply standardised joinery from stock, they are always ready to supply special designs and quotations. Structural steelwork of great variety as well as metal equipment and apparatus of many kinds are also among the specialities for which Messrs. Boulton and Paul have achieved wide reputation. Separate catalogues of a comprehensive nature are obtainable upon request in respect of the following productions: Wood framed houses and bungalows, motor-car houses, revolving shelters and summer houses, stables and farm buildings, pavilions, churches, bandstands, joinery, portable wood and iron buildings, poultry houses and appliances, kennels, hunting stables, horticultural buildings, greenhouses, garden frames, heating apparatus, gates, iron and wire fencing, garden furniture, steel-framed farm buildings, steel structures, "Electrolite" lighting and power plants, "Boulton" elevators for deep wells, "Lowrev-Turbo" pumping sets, and self-oiling pumps.

Buckland Sand and Silica Co., Ltd. (Buckland, Betchworth, Surrey). **Stand No. 129, Row G.**

Sands and Aggregates.—This company is exhibiting various classes of sand from their extensive sand deposits in the parish of Buckland, which are situate convenient to the new east and west concrete road between Reigate and Betchworth, Surrey. These deposits are derived from the outcrop known to geologists as the lower green sand measures. There are various types of building sand shown, including a pure silica sand, which is now recognised as a most valuable material for concrete work, steel reinforcement, and the manufacture of cast stone. There are excellent loading facilities on the main road. Interesting features of their exhibit are specimens of cast white sand stone made from this white silica sand. It can be moulded or carved with greater facility than Portland or natural sand stone, and becomes exceedingly hard and durable. This stone is being largely used in London buildings, and it is claimed that it stands the London climate better than most natural stones. The company also supplies a high quality of grey stone and white lime from their lime pits.





SOME STANDS AT THE BUILDING EXHIBITION.

Carter and Co., Ltd. (Encaustic Tile Works, Poole, Dorset, and 29, Albert-embankment, S.E.11). **Stand No. 100, Row F.**

Tiles, etc.—On this stand—than which there is none more tasteful in the exhibition—there is tiling of distinctive character suitable for every purpose from domestic fireplaces and nursery and other dados to exterior work on shopfronts and theatres, cinemas, etc. For this latter purpose there are shown some delightful ceramic marbles (glazed terra-cotta), and faience in which architects who are undertaking concrete structures of the heavy type will do well to take interest. Some of the attractive all-tile fireplaces are worthy of notice, while suggestions which are hinted at on the stand are wall tiling for hairdressers' shops, nurseries, dairies, etc., while floor tilings for loggias are shown also.

Colthurst, Symons and Co., Ltd. (Bridgwater). **Stand No. 148, Row H.**

Roofing Materials.—An excellent display of roofing tiles of pleasing texture and colour is to be seen on this stand. Notable exhibits are the patent interlocking Roman tiles, which so interlock that they are not easily displaced, and nailing is rendered unnecessary. The patent "Paragon" tile has raised checks, which give protection against side or up drifts. The "Acme" tile is another interesting exhibit, a special point of which is that the bonding—roll clips and covers the joint of adjacent tiles, and, being arrow-shaped, conducts flow of water down its own channel from ridge to eaves courses. The lapping capacity may be varied up to 4 in., an important point when buildings are placed in exposed situations. Plain tiles, machine-made and hand-made, both plain and sand-faced; also toned tiles in light and dark tints; ridges, finials, oven and paving squares, land drain pipes, hip and valley tiles, and the Bridgwater bath-scouring bricks are other attractive features of an interesting exhibit.

Courtrai-du Nord Tile Co., Ltd., (161, Borough High-street, S.E.1). **Stand No. 284, Row S.**

Tiles.—This is a very attractive stand that has been built from the designs of Mr. Herbert Welch, F.R.I.B.A. It is specially designed to show the properties and charm of these Courtrai-du-Nord tiles. These are of the interlocking variety and have the property of weathering in very charming fashion after but a short exposure. That these tiles wear well is shown by an exhibit of a 43-year-old tile taken from a Flemish building, which is as good as new. Other exhibits are glass tiles for skylights, for studios, etc., while sections of a roof, accessories, etc., are also on view. Some pleasantly coloured glazed tiles are shown, which, with other varieties and a display of photographs of jobs carried out by the company, complete a useful and instructive exhibit.

The Crittall Manufacturing Co., Ltd. (210, High Holborn, W.C.1). **Stand No. 135, Row G.**

Metal Windows.—Incorporated in this exhibit are metal windows for all types of buildings. Examples are shown of:—Crittall "Universal" casement window, as used in modern banks, stores, city offices, and all public buildings; a range of specially designed school and hospital windows; "Standard" metal windows for all domestic work, including examples of French doors, bay windows, and metal windows and doors complete in wood surrounds with oak cills; a range of standard windows specially designed for use in tropical countries; standard "Fenestra" sashes for warehouses, factories, agricultural and all industrial buildings. A display of architectural bronze and roof glazing completes a noteworthy exhibit.

Empire Marketing Board and Department of Overseas Trade (35, Old Queen-street, S.W.1). **Stand No. 120, Row F.**

Empire Timbers.—The exhibit displayed on the Empire Marketing Board stand has been arranged by the Imperial Institute, and is designed to illustrate some of the more important Dominion and Colonial timbers which have been reported on by the Imperial Institute Advisory Commitee on Timbers, as well as other work of interest to the building trade carried on in the laboratories of the Institute, and the Forests Products Research Laboratory at Princes Risborough.

As illustrating the uses of some of the lesser-known timbers from British countries, there is a boudoir in Burma mahogany with a parquet flooring of Indian Gurjun exhibited by Messrs. W. W. Howard Bros.; doors in Burma mahogany, White Bombay, African walnut and Iroko, by Messrs. Holloway Bros.; mantelpiece in carved Indian teak, overmantel in Andaman's Padauk and ebony, doors in Burma teak with Iroko panels, and also in British Columbian pine (Douglas fir) exhibited by Messrs. Holliday and Greenwood, Ltd. A selection of the timbers recommended for use in this country by the Imperial Institute Advisory Committee on Timbers is shown in the form of typical planks, each of which is fully labelled with particulars as to its uses, sizes and prices. Two show-cases are devoted to examples of the work carried out at the Imperial Institute by the Mineral Resources Department and the Plant and Animal Products Department. There are many other interesting exhibits

Field and Field, Ltd. (91/93, Bishopsgate, London, E.C.2). **Stand No. 313, Row V.**

Tiles.—This stand illustrates the use of Courtrai and Nord interlocking roofing tiles, the production of which is the result of 65 years of experience. The tiles are made from a plastic homogeneous clay that ensures imperviousness to rain, while a porosity of less than 7½ per cent. renders then proof against frost. In appearance they are excellent, having a nice texture and a richness of effect that appeals to the architectural eye. The company also supplies heavy pressed glass tiles as well as cast-iron skylights, made in sizes to suit tiles. Courtrai and Nord tiles have been used with satisfactory results by housing authorities throughout England and Scotland. An illustrated booklet which the firm has issued gives some valuable data relating to these tiles as well as some useful hints on fixing. A copy will be readily given to all visitors to the stand.

W. N. Froy and Sons, Ltd. (Hammersmith, W.6). **Stand No. 33-40, Wallspace, Gallery.**

Fireplaces and Surrounds.—In the various rooms of this, Messrs. Bath Artcraft, Ltd.'s most charming and tasteful stand, are fitted Messrs. Froy's fire-grates and surrounds. The grates—for use with coal and logs—are in several very attractive styles, to suit the room in which they are fitted. Some beautiful marbles and alabasters have been used for the grate surrounds, which further enhance the beauty of this charming stand. No one—whether architect or layman—should leave the Exhibition until he has paid a visit to the exhibit.

The General Tile Co., Ltd. (19/20, Craven-street, London, W.C.2). **Stand No. 292, Row T.**

Tiles, etc.—On this stand is an excellent display of tiles for a variety of purposes as well as fire surrounds. Notable exhibits are the "Relco" relief wall tiles of cement basis, coloured and glazed by a patent process. The tiles are claimed to be frost-proof and fireproof, and are made in a large variety of colours and designs. "Relco" fire surrounds (for both coal and gas) are also on view. "Marblico" inlaid marble floor tiles, also shown, are manufactured under a pressure of 2,500 lb. per sq. in. They are exceptionally hard and strong, and it is claimed that floors laid with these tiles can be used a few hours after laying. "Marblico" inlaid marble sinks (Belfast pattern), cement floor tiles, made in a wide range of colours, and ceramic floor tiles are other ex-

Guillet, Sons and Co. (13A, Finsbury-square, London, E.C.2). **Stand No. 34, Row C.**

Woodworking Machinery.—This is an exhibit that will appeal not only to the mechanically-minded, but to all who are interested in increased production and efficiency. A planing and thicknessing machine was in operation when we had the pleasure of examining this exhibit, and we were impressed with the rapidity and cleanness with which it turned out perfectly surfaced work. A special point about some of the machines on view is that they are fitted with totally enclosed gears, thus ensuring complete safety for the operator. Following is a list of the exhibits on view, all of which will repay close inspection:—High-speed vertical spindle moulding machine; high-speed planing and surfacing machine; high-speed panel planing and thicknessing machine; combined surfacing and thicknessing machine; circular saw bench; high-speed chain and hollow chisel mortising machine; high-speed spindle moulding and tenoning machine; high-speed tenoning machine; planing and thicknessing machine; high-speed automatic chain mortising machine; five-cutter planing and moulding machine; high-speed three-cutter planing and moulding machine; high-speed five-cutter planing and moulding machine; chain mortising machine; hand-power mortising machine; double-belt sandpapering machine; high-speed vertical bandsaw.

Edward William Hewett ("Cornhill," The Hangers, Bishop's Waltham, Hants). **Stand No. 294, Row T.**

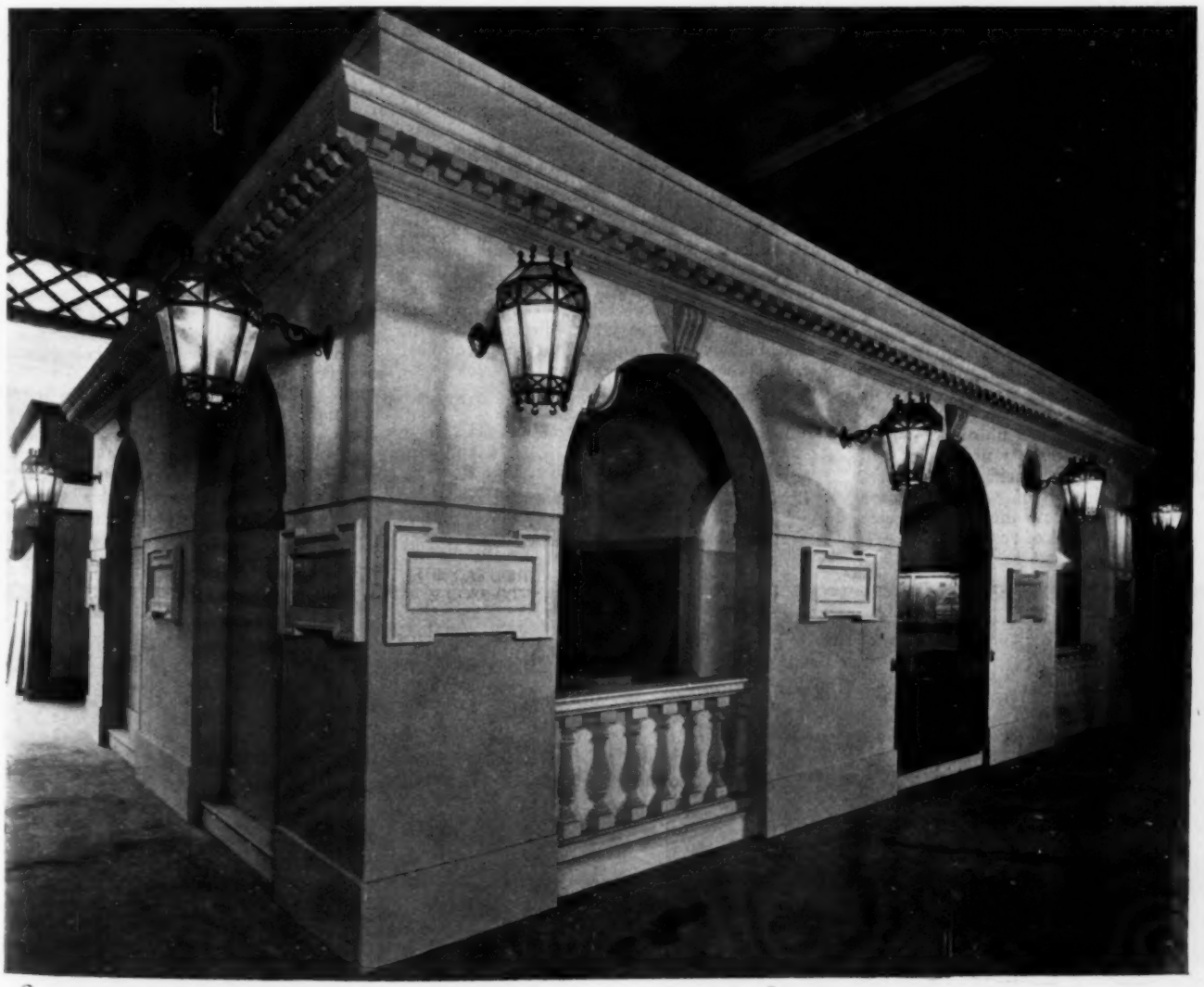
On this stand are shown hand-power concrete-breeze, block and brickmaking machines, the machine and method employed being demonstrated. These machines can make 700-800 perfect 18 in. by 9 in. by 4 in. blocks per day, and 2,500-3,000 bricks per day (from brick machine). No tamping is required, and the machine, we learn, is simple and easy to work and gives ample compression, and makes absolutely true to size and shape, while delivering on edge, ready to take away. There is nothing to get out of order. The power device is by Hewett's special up-to-date "Trip Lift Jack," designed specially for these machines. Heavy and strong in construction, with lifting power up to three tons, all working parts are special steel and of such proportions to justify years of hard wear. In short, nothing has been spared in the entire assembly of these machines to make them efficient, strong and reliable, consistent with good workmanship and finish. It is claimed for this machine that it can cover its entire cost in the saving effected in less than one week's work. This is certainly a stand which all alert builders should inspect.

Honeywill Brothers, Ltd. (79, Mark-lane, London, E.C.3). **Stand No. 55, Bays. Gallery.**

Builders and builders' merchants will find this stand of interest, for in the section given over to building materials department, the firm—who are the sole importers and distributors for England and Wales—display "Gyproc" fireproof wall board (made in Canada), "Vida" portable panel strip and panel oak parquetry, and "Mollith" asbestos cement slates and flat and corrugated sheets, which will certainly interest the alert builders. The firm display in the engineering department: "Rogers" automatic knife-grinding machines for planer knives, etc., automatic saw-sharpening machines, etc., of which they are sole agents. This will interest all connected with woodworking machinery. The stand is panelled with "Gyproc," with various finishes, and samples of the other materials are shown in a comprehensive exhibit.

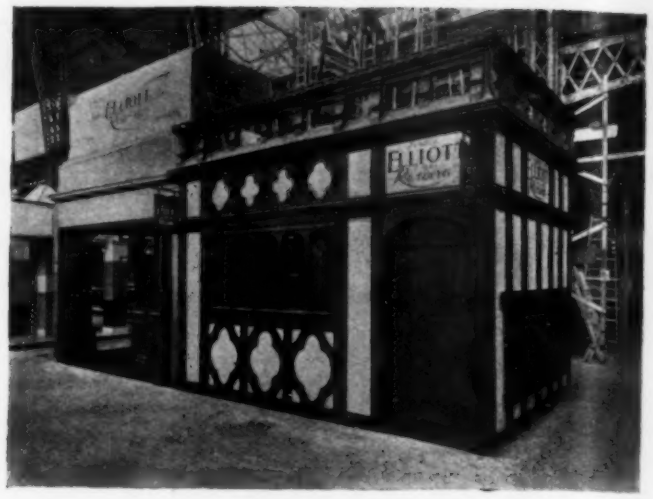
Langley (London), Ltd. (161, Borough High-street, S.E.1). **Stand No. 143, Row H.**

Tiles and Flagging.—This stand—a most attractive one, designed by Messrs. Halliday and Agate, A.A.R.I.B.A.—demonstrates on its roof some blue-glazed interlocking pantiles, very charming to see and practical in use. Of



The Gas Light and Coke Company's Stand at the Building Exhibition.

Mr. Walter Tapper, A.R.A., P.R.I.B.A., Architect.



Stands at the Building Exhibition.

a large size, they make laying a comparatively short task, 12s covering 100 sq. ft. Many other varieties are displayed on the counters surrounding, including glass interlocking tiles for skylights, etc., and the popular "Marseilles," "Beauvais," and "Gilardoni" tiles. A special feature is made of the "Porphry" flooring slabs, for use where exceptionally heavy work—ironfoundry, chain-making, etc.—is being carried on, while an extra hard variety of their "Porphry," "Stelcon," is also shown. This is reinforced with steel and is guaranteed to stand up to anything. It is made under a pressure of 250 tons to the square foot, and so contains no interstices. It has been used, we learn, by the West Ham Borough Council for kerb setts in Canning Town, where the dock traffic requires the replacement of the ordinary granite setts every six months. Kerb setts that have been in use for seven years are displayed on the stand, and we commend their notice to architects, surveyors, engineers, and all to whom highway engineering and unwearable floorings are a matter of interest.

Laws Bros., Ltd. (Africa House, Kingsway, London, W.C.2). **Stand No. 15a, Gallery.**

Plan Reproduction.—This firm is showing an exhibit that is of special interest to architects and all others who require drawings to be reproduced. By the special process followed by this firm a perfect reproduction is obtained. Chalking is entirely eliminated, and the semi-raised block line obtained, which is solid and non-smearable, is useful in preventing the spread of colouring. The firm undertake quick delivery of work, and we understand that there is no increase of price over the ordinary method of reproduction.

George Lillington and Co., Ltd. (69, High Holborn, W.C.1). **Stand No. 265, Row R.**

Waterproofing Liquid and Bituminous Paint.—This stand will interest those architects who wish to ensure the watertightness of the lower courses of brickwork in house construction, or are faced with the problems of rendering watertight houses and cottages already erected. On this stand is erected a section of a brick wall. The upper portion is treated with No. 2 Metallic Liquid (two coats) and the lower part is natural brick. One face of the brickwork is subjected to a constant stream of water, and on going round to the reverse side, the lower, untreated portion is moisture-laden, while the upper portion—that treated with the Metallic Liquid—is bone dry. The preparation is made, we learn, in several grades, No. 1a for internal purposes—such as damp-proofing and hardening plaster, cement, etc.—and No. 2 for external use. The stand should be visited by all interested in the question of waterproofing and preserving brickwork, stone, cement-rendering, roughcast and stucco, timbers, woods and fabrics.

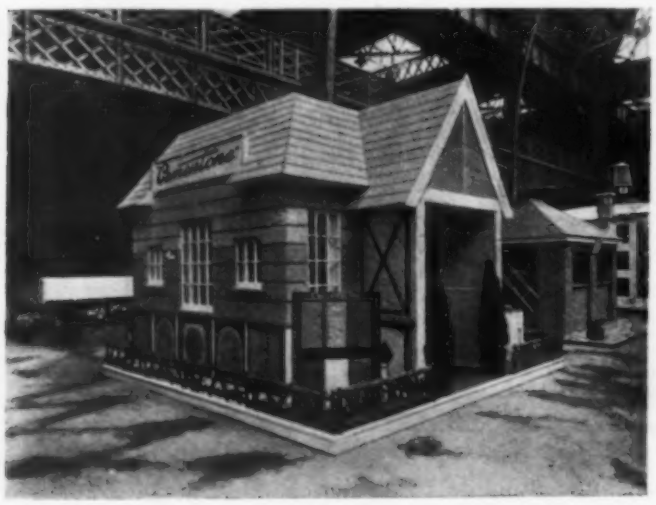
Also on view is "Lillinoid" bituminous paint, which—forming, as it does, a permanent adhesive film of bitumen over iron and steel—is of great use for application to ironwork, bridges, corrugated iron roofs, cranes, etc., girders, gasometers and tanks of all descriptions.

Francis Morton, Junior, and Co. (24, High Holborn, London, W.C.1). **Stand No. 178, Row J, and Stand No. 193, Row K.**

Spring Dancing Floors.—The spring dancing floor is now so frequently encountered that the present generation of dancers knows the discomfort that accompanied dancing on the old-fashioned "fixed" floor mostly by hearsay. With Morton's patent "Valtor" system elasticity is attained by an arrangement of helical springs connected to steel girders supporting the floor, the timberwork of which can be of ample strength for all purposes. By the addition of locking gear the floor can be made absolutely rigid when required by throwing the springs out of action without disconnecting or removing any of the parts. An illustrated brochure, which may be obtained on the stand, shows a number of interesting installations, and demonstrates the adaptation of the system to temporary winter dancing floors over swimming baths.

Nautilus Fire Co., Ltd. (60-2, Oxford-street, W). **Stand No. 312, Row V.**

Gas Cookers and Flue Blocks.—A range of gas cookers are shown on this stand, which will be of interest to architects and speculative builders who plan attractive and labour-saving kitchens for their jobs. The "Alpine" "Economy" gas cooker is an attractive exhibit. This has a section planned as a muffin-plate, which may be used also for putting pans to simmer. There is also a section given over to the warming of plates, etc. The oven proper is heated by a new system, being a line of jets at the back only, instead of down either side. The whole is enamelled in grey porcelain, which makes for easy cleaning. The stand contains also a number of examples of the well-known "Nautilus" fires, while a special display is made of the "Nautilus" cast-concrete "Economy" flue-blocks, which, by an ingenious arrangement, do away with chimney-breasts and render it possible to put the gas-fire in any part of the room. A geyser display, and a number of



Stands at the Building Exhibition.

wood mantels and some good tiling, complete an exhibit that is full of interest.

Redalon, Ltd. (REGENT HOUSE, REGENT STREET, W.1). **Stand No. 136, Row G.**

Floorclips and Aggregate-exposer.—This firm is exhibiting on the Adamite Company's stand "Redalon" liquid, and the by now well-known "Bulldog Floorclip." This latter product is already known to our readers, but a short recapitulation of the facts may be of advantage. These clips are of use for anchoring wood floors in reinforced concrete buildings. After the concrete floor slabs have been poured and levelled, the "Bulldog" clips are pushed into guide marks flush with the concrete. The tabs are then raised and the nailing strips laid in place and secured. Wood floors laid thus are lifted above concrete level, are true and free from danger of dry-rot. "Redalon Liquid" solves two universally-experienced difficulties of concrete construction. The patchy and monotonous appearance of some concrete surfaces is often due to the presence of a skin of grey Portland cement. Most processes of casting concrete bring some neat cement to the surface. Removing this skin exposes the aggregate, which may possess considerable beauty. In addition a skin containing a high percentage of neat cement sets very hard. It forms an undesirable base upon which to apply a concrete plaster rendering, whilst to remove it is difficult. The neat cement skin can be simply removed from the surface of concrete by "Redalon Liquid" at a small cost. It can be used on either timber or steel centering. Being waterproof it can be applied to centering either before or after erection. As soon as the "Redalon Liquid" is dry (about a quarter of an hour after application) the concrete can be poured. After striking the centering, brushing the concrete with a wire brush removes the outer cement skin, exposing the aggregate to a depth of approximately one-eighth of an inch. Brushing the centering with a bristle brush leaves it clean and ready for use. "Redalon Liquid" does not damage the concrete. It merely retards the outer cement skin from setting until the centering is removed. The process of brushing removes all the retarded cement. Brushing should be done as soon as possible after the removal of the centering to prevent the cement skin hardening after exposure to damp and air. The stand contains some exhibits of concrete, both treated by "Redalon Liquid" and natural, that provoke interest in architects, contractors and all having to do with construction.

W. Reddall, representing **Fyffe and Co., Ltd.**, (89, NETHERGATE, DUNDEE), and **Broughton Copper Co., Ltd.** (MANCHESTER). **Stand No. 249, Row P.**

Copper Joints and Piping.—Copper piping and jointing is coming more and more into favour in domestic engineering and plumbing. That this is so is shown clearly on this stand, where Messrs. Fyffe's are making a special show of their "Instantor" patent compression joints for hot and cold water domestic services, and especially for domestic waste and anti-syphon pipes. We understand that the cost of putting in copper tubing—taken over material, efficiency and time of laying—is no more than for the usual lead piping, while copper is claimed to have the advantages of being 4½ times as strong as lead piping, while its life is infinite. It is quick to put down, and has an attractive appearance and decorative value of its own. Messrs. Broughton include in their exhibit their "Special Temper" tubes, made to B.E.S.A. standards for use with compression joints. Copper traps and flush pipes, roof sheeting, guttering and downpipes, and a variety of heavy-gauge tubing for screwing purposes complete an exhibit that no domestic engineer, central heating specialist or master plumber should miss.

Sharp Bros. and Knight, Ltd. (SHOBNALL-ROAD, BURTON-ON-TRENT). **Stand No. 119, Row F.**

British Joinery.—A special feature of English-made doors is made on this stand, which will interest those who set store by good materials and sound craftsmanship. Other English-made joinery is displayed, notably casement windows, gates, cupboards, dressers, mantelpieces, staircases, and "S.B.K." kiln-dried red deal doors. This firm also makes a speciality of carrying out all classes of hardwood joinery to architects' details.

The Somerset Trading Co., Ltd. (BRIDGWATER). **Stand No. 91, Row E.**

Tiles, etc.—On the roof of this stand is shown an excellent display of interlocking tiles, which form an economical and weather-proof roof covering. They are of a pleasing red colour, that harmonises perfectly with the countryside. On the sides of the stand are plain and ornamental tiles suitable for vertical hanging. They are of great durability and excellent in appearance, weathering with the roof covering and thus avoiding any clashing of colour contrast. Ridge tiles of various patterns are shown, as well as garden vases, which are made from the same type of clay but by potters instead of the ordinary tile makers. Other exhibits include building and moulded bricks, air bricks, fixing bricks, oven bricks, finials, flooring tiles, oven tiles, etc., as well as chimney pots and coarse pottery ware.

Standard Cork Co., Ltd. (14, WEST SMITHFIELD, E.C.1). **Stand No. 195, Row K.**

Cork Tiling.—Cork for flooring purposes is rapidly gaining in popularity. It has the advantages of being warm, resilient, noiseless, non-slippery, and fire-retarding, being thus suitable eminently for hospitals, libraries, churches, banks, offices, ship saloons, etc. The exhibits on this stand are the various forms of "Eldorado" cork tiling in a variety of soft brown colours and of varied designs, which make a great appeal to the artistic mind for furnishing in attractive style. The tiles, which gain their rich brown colour from a baking process, can be polished readily and present a charming appearance.

Allan Ure and Co. (SPRINGBANK IRONWORKS, KEPPOCH HILL, GLASGOW). **Stand No. 208, Row L.**

Grates and Cookers.—"Back to back" grates and interior cookers are here shown in operation. The Ure combination will simultaneously (on one side) boil and stew on the hot plate, cook a large joint and provide plenty of hot water, as well as afford all the heat required for the drying of clothes. At one and the same time it ensures a comfortable working atmosphere in the kitchenette, and heats the adjoining sitting room, one fire thus doing the work of two. The apparatus has the additional advantage of being capable of being made into a gas cooker during the summer. Recommendation of the excellence of these grates is to be found in the fact that they have been extensively used by the London County Council, the Edinburgh, the Glasgow, the Manchester and the Cardiff corporations in their housing schemes. As an ingeniously economical dual-purpose fitment the Ure back-to-back grate must command the attention of all who are interested to secure cooking and heating efficiency at low cost.

SOUND-PROOFING AT OLYMPIA.

An interesting example of scientific sound-proofing is to be found on *The Builder* stand, No. 231, Row N, in connection with the special room in which talks on Old London are given. This room is insulated in floor, walls and roof with "Maftex," supplied by Messrs. MacAndrews and Forbes, Ltd. "Maftex" is a modern insulating material both for outside and inside work. It is made from the tough, stringy liquorice-root fibres. The liquorice plant grows best in the heavy soil adjacent to river beds. Here it is subjected to repeated inundations, and it is not considered properly grown and ready for harvest until it has passed through the heat of summer and the rains of winter for at least four years. The root comes from all parts of the world, much of it from Asia Minor and the countries bordering the Mediterranean and Black Seas. In the manufacture of "Maftex," the roots of liquorice are shredded, cleansed of foreign substances, and are boiled for hours to extract all non-fibrous material, and at the same time effect complete sterilisation. The root fibres are next thoroughly washed to insure removal of any remaining sand or particles. There remain only the long, tough, elastic, reinforcing root fibres, ready to be waterproofed and passed through many presses that felt them into millions of densely compacted microscopic dead-air cells that check the passage of heat and form a continuous single-ply board without laminations. The finished "Maftex" board, with its ripple bonding surface, is "seasoned" by drying at a temperature of 300 deg., and then cut into standard sizes. The material is 7/16 in. thick, and made in sheets 3 and 4 ft. wide and 8, 9, 10 and 12 ft. lengths, and has a variety of special applications, including sound-deadening and floor insulation, roof insulation, interior wall finish, decoration, and it is used as a base for plaster and rough-cast.

EDUCATIONAL EXHIBITS

IN the Gallery of the Main Hall there is a series of stands that ought not to be overlooked by any visitor who is interested in the progress of architectural and building education in this country, especially that carried on at our technical institutions and evening schools. The schools represented are as follows: The Regent-street Polytechnic, the Northern Polytechnic, the L.C.C. Brixton School of Building, the Borough Polytechnic Institute, the Willesden Polytechnic Day School of Building, the Tottenham Polytechnic (Building Department), the L.C.C. Hammersmith School of Arts and Crafts, the County Borough of Southend-on-Sea Municipal School of Arts and Crafts and School of Architecture, and the Evening Technical Institute, Southend-on-Sea.

It is impossible to refer to each exhibit in detail, but it may be said generally that the standard of work shown is excellent. It is difficult to believe that much of the craft work and draughtsmanship on exhibition is by youths who are in their middle 'teens or even younger. Much credit is due to the teachers, for it is obvious from only a cursory survey of the various stands that the instruction which is being given at our building schools must be of a high standard of efficiency. Much of the solid work, we are glad to note, is full size, though the small-scale model is still in evidence. We realise, of course, that for every student to work to full size must involve considerable expense, but wherever it is possible the practice should be adopted, for it gives the student a great measure of confidence (which he can never otherwise acquire) when he finally comes into contact with actual building operations.

Some of the schools exhibiting train for the qualifications necessary for the architect as well as the builder and the surveyor, hence we find a number of representative drawings for the competitions organised by the R.I.B.A. and for the Final and Intermediate Testimonies. They are, on the whole, well up to the standard of modern school draughtsmanship. Some first-rate studies of antique heads are also on view. Building construction and geometrical and working drawings are also well in evidence, as well as freehand drawings of constructional units and designs for decorative metalwork.

A large field of practical building work is well represented by many examples of craftsmanship, etc. In carpentry, joinery and cabinet making, painting, decoration and signwriting, plumbing and sanitation, brickwork, masonry, plastering, heating and ventilation, acetylene welding, metal plate work, etc., there is much to examine, much to admire, and, we think, little to criticise. All who are interested in the future of the building industry, especially of its crafts, cannot but be stimulated by the comprehensive array of work which is here on view.

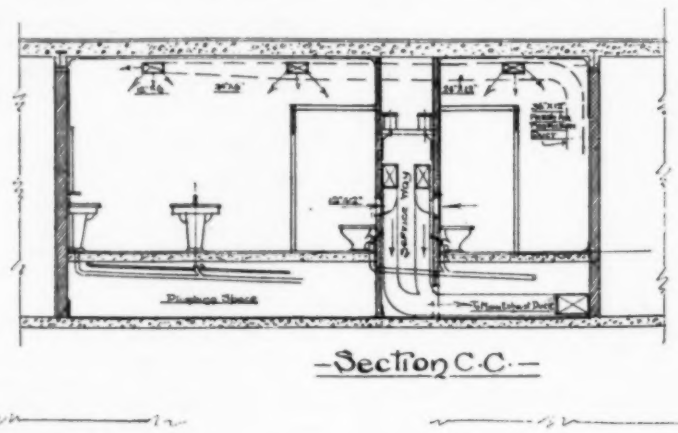
SANITARY ACCOMMODATION FOR HOTELS AND FLATS

We have received a copy of the Henry Saxon Snell Prize Essay for 1927, by Mr. Henry H. Clay. It deals with "Sanitary Accommodation, Appliances and Fittings for Hotels and Flats," with suggestions as to proper placing, arrangement, ventilation and lighting, particularly where there are no external walls in which windows can be placed. In his Foreword the writer points out that the practice of sanitary engineering as applied to buildings has, in the course of the last three decades, become subject to a more or less unbending orthodoxy. In large measure this is a natural result of legal restrictions which, though undoubtedly necessary, and from almost every point of view beneficial, must to some extent put a check on initiative and tend to retard progress. That finality in the construction and equipment of buildings has been reached, or perfection attained, is, he claims, by no means the case. Indeed, in quite recent years the design, materials, methods of construction, equipment, and even the purpose of large buildings of residential character, such as hotels and flats, have been subject to changes of revolutionary order. These changes, together with modern conditions of site congestion and enhanced values, greater height of buildings, and—more particularly—greater depth below ground, with the resultant increased proportion of "party" walls, are productive of conditions the cumulative effect of which is to necessitate a widening of the field of practice, and a revision of methods and formulas hitherto pursued. That this necessity is recognised officially is evidenced by the redrafting, now in progress, of by-laws under which sanitary work is carried out in the Metropolis. The Essay is full of valuable suggestions, and contains a number of illustrations, some of which we reproduce by permission, together with the following extracts:—

In hotels and flats, the proportion of sanitary apartments to the whole is greater, whilst the proportion of external wall reasonably available for them may be actually less than in other types of building. Cases in which it is difficult or even impossible to place these apartments upon external walls, though not infrequent in some areas, are exceptional and must be regarded as calling for special treatment. By-laws under which certain sanitary fittings are required to be constructed upon external walls and to be lighted and ventilated directly into the external air, are essentially sound. Indeed, the advantages of an external position are such as to secure its adoption wherever possible, even though the by-laws did not exist. In no case and by no means can these advantages be so easily and economically secured elsewhere. It must not be forgotten, however, that the advantages referred to are not entirely without limitations. All sanitary apartments are dependent upon artificial light for some parts of the day, and external ventilation is operative only when the means of ventilation are open.

Internal Positions.

Where the construction of a sanitary apartment in an entirely internal position is unavoidable, careful consideration of all salient points is necessary, in order that a scheme, in which as many desirable ends as possible



Suggestion for Duplicated Sanitary Apartment in an Entirely Internal Position (away from External Walls).

(From the Henry Saxon Snell Prize Essay, 1927.)

are incorporated, may be produced. The chief of these points are:—

(1) The production and maintenance of a high standard of sanitation.

(2) Convenience, and avoidance of all possible objection.

(3) Simplification and elimination from view of pipes and connected works; and

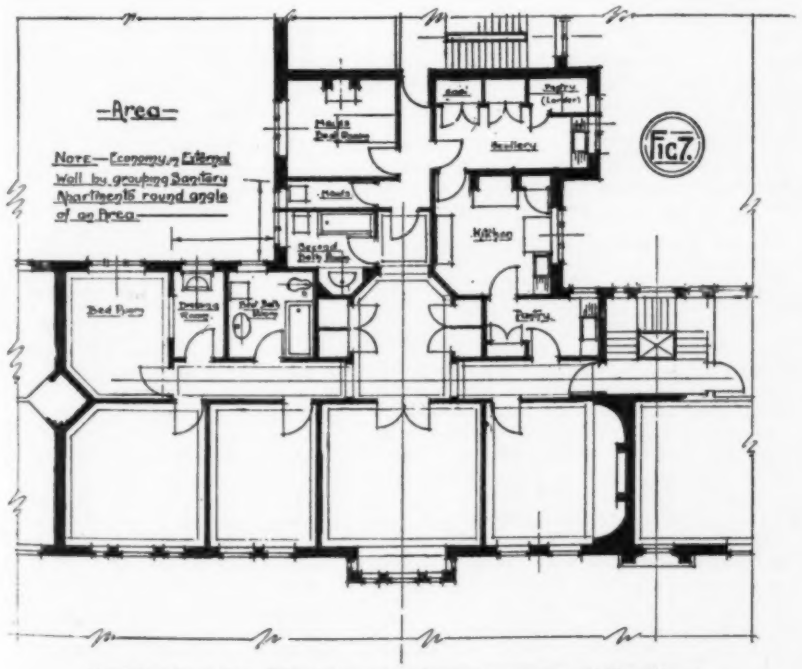
(4) Ready means of access to all such works.

Other considerations are the simplicity and cleanliness of electric light, and the efficiency of modern means of mechanical ventilation. On page 698 is shown a scheme in which the whole of the above points are dealt with, and which is capable of expansion or modification to meet most cases. The scheme first of all utilises some of the height (always available at points likely to be dealt with), and by means of a false floor at once provides plumbing space and reduces height of the apartment to a reasonable dimension.

Sanitary Accommodation for Flats.

Only in "Service Flats"—or what in America are known as "Apartment Hotels"—does the provision of direct external light and ventilation to sanitary fittings present any difficulty. In such cases the difficulty is generally in connection with the "service," and the arrangements already dealt with apply. In private residential flats the difficulty is more generally one of arrangement and economic planning, with a view to obtaining the maximum advantage without undue monopoly of the valuable external walls.

A suggestion in which this point is dealt with is illustrated below. In this scheme an unusually large number of sanitary fittings is introduced in order to show how, despite their number, they may be properly arranged in well-lighted and ventilated apartments, and how by grouping the latter round the angle of an "area"—which in some form or other always occurs in these buildings—the actual extent of external wall occupied in proportion to the number and extent of the apartments themselves may be reduced to a minimum. Soil and waste pipes and other connected works are simplified. Moreover, such grouping is, in effect, in harmony with the universal desire for labour saving in household management. The only position in connection with flats in which it should be necessary to place sanitary fittings otherwise than upon external walls is in the basement.



Suggestion for Placing and Arrangement of Sanitary Fittings in a Flat.

(From the Henry Saxon Snell Prize Essay, 1927.)

GREATER LONDON HOUSING CAMPAIGN

By JAMES P. ORR.

VII.—LOCAL AUTHORITIES' PROGRESS UP TO SEPTEMBER 30th, 1927.

In *The Builder* of January 22, 1926, the progress of the Greater London Housing Campaign was reviewed as at September 30, 1925; and the progress in each subsequent six months up to March 31, 1927, was reviewed in later articles.* The purpose of this article is to bring the review up to September 30, 1927. As usual, houses rated at more than £35 are excluded from consideration, as they are rarely occupied by wage earners.

The efforts of local authorities to get as many as possible of their subsidised houses completed before October 1, 1927, when the State subsidy was reduced by £25 per house, resulted in a record output for the six months preceding that date, both in England and Wales as a whole and in Greater London. The London output beat that of the previous six months (itself till then a record) by 95 per cent., while outside London there was a corresponding increase of 105 per cent.

The local authorities of Greater London completed 11,135 houses in the last six months, and so brought their total post-war output up to 57,582. The corresponding figures for the whole of England and Wales were 75,913 and 383,680, respectively.

Further details of recent progress in London are given in Table I (page 700).

The figures for this last half-year are worth study, as illustrating what the building industry on the one hand and the local authorities on the other can do under a special stimulus such as was supplied by contemplation of the reduction of the subsidy. In this eighteenth half-year since the war, the local authorities completed nearly one-fourth (column 2), and the industry nearly one-fifth (column 5), as many houses as they had completed in the previous seventeen.

In these three and a half years well over 100,000 houses have been completed in Greater London; the number of municipal houses has been more than doubled, and the total supply of small post-war houses has been rather more than trebled.

The Greater London output of post-war houses as at September 30, 1927, is compared with that of England and Wales, Birmingham, Liverpool and Manchester, in Table II (page 700).

**Builder*, 9, vii. 26; 18, ii. 27; 15, vii. 27.

It will be observed that the relative extent to which the three sources of supply have been drawn upon has varied markedly from place to place. While London has relied mainly on private enterprise, Birmingham, Liverpool and Manchester have been far better served by the local authorities, which probably means that in these three great towns the families benefited by the housing subsidy include a far larger proportion of families earning low wages than in London.

Both Birmingham and Liverpool Corporations have erected more than twice as many houses per thousand of population as the local authorities of Greater London; but the outstanding figure is the 19 houses per thousand of population erected by Birmingham, nearly twice the corresponding figure for England and Wales. The thorough-going methods of the Birmingham Corporation were set out in the fourth article of this series (vide *The Builder* of September 10, 1926, p. 419). Thanks to these methods the Birmingham success consists not in mere numbers of houses erected, but in the fact that the new houses have been located so as to suit the ascertained needs of the ill-housed population whom the Corporation marked down for relief, and that the weekly rents, inclusive of rates, have been kept down to such low figures as 15s. 6d. and 14s. 9d for 5-roomed and 11s. 2d. and 9s. 4d. for 4-roomed cottages, without putting any burden upon the public purse beyond the statutory subsidy.

Distribution of Local Authorities' Houses.

The reduction of the subsidy is pretty certain to result in a diminution of the activities of the local authorities. Their aggregate six-monthly output, which had been rapidly rising since 1923, has now reached its peak. It will, therefore, be interesting to place on record the position at this peak point as regards the distribution of the whole of their post-war houses. Table III. has been compiled for this purpose (page 700).

Houses Completed in the Six Months, April to September, 1927.

(*a*) L.C.C. Houses.

The bulk of the 4,721 L.C.C. houses completed in the last six months were, as usual, in Becontree (2,314) and Downham (976), but the distinguishing feature of the period was the long-awaited provision for the north-west of London County through the completion of the first 1,137 houses in the Watling Estate, Hendon. All these L.C.C. houses, except nine Addison houses in Roehampton, were built under the 1924 Act, with the 40 years' subsidy of £40 per house per annum; none under the 1923 Act.

(*b*) Other Authorities' Houses.

By far the largest contribution was that of Woolwich—589 Wheatley houses. Other outstanding contributions were:—

(i.) Chamberlain Houses:—Lambeth, 186; Hornsey, 164; Uxbridge, 164; and Dartford, 154.

(ii.) Wheatley Houses:—Tottenham, 277; Croydon, 260; Lewisham, 210; Willesden, 200; Ealing, 175; Hayes, 174; West Ham, 152; Edmonton, 134; and Epsom Rural, 134.

Local Authorities' Post-war Achievements up to September 30, 1927.

Within the several counties there is an even wider range of achievement by individual authorities than the range from 3.85 to 20.4 houses per 1,000 of the population among the counties themselves (*vide* column 7). To save space and avoid

repetition, figures indicating numbers of houses will be supplemented by figures in brackets indicating the corresponding *number per* 1,000 *of population.*

Inner and Outer London Compared.

The people of Inner London still depend for the housing of their poorer classes mainly on the L.C.C., the City Corporation and the 28 Metropolitan Borough Councils; those of Outer London on the five other County Councils and 91 Borough and District Councils. What these authorities had achieved since the war up to September 30, 1927, for their respective constituents may be summarised thus:—

For Inner London there had been provided 30,208 (6.55) houses, viz., by the L.C.C. 7,320 in London County and 13,945 outside, total 21,265 (4.61); by the other local authorities 8,723 in London County and 220 outside, total 8,943 (1.94); for Outer London there had been provided by 96 local authorities 27,374 (8.48) houses.

L.C.C. Houses.—The distribution of the L.C.C. houses by counties is shown in column 4 of Table III. In London County their largest estates are Downham with 2,990 houses, and Bellingham with 2,095, both on the south-west edge of the county; Roehampton with 1,204 and Old Oak, Hammersmith, with 736. In Essex their 11,436 houses are all on the Becontree Estate. In Surrey only the one estate, Norbury, had been developed by the end of last September; but the development of a huge new estate in Morden had been commenced. In Middlesex 1,137 and 116 houses had been completed in the last six months in the new Watling Estate (Hendon) and Wormholt Estate (Hammersmith) respectively, and the remaining 1,018 houses are in White Hart-lane Estate, Tottenham.

The enormous value of the L.C.C.'s work to Inner London can best be appreciated when it is realised that the houses provided by the other 29 authorities of Inner London amounted to less than 2 per 1,000 of population. The pity is that so few, only 2,509, of the L.C.C.'s 13,945 houses in Outer London lie outside the Becontree Estate, which, being over 10 miles from the centre of London, cannot conveniently serve any but the eastern boroughs. This defect is, however, being cured by the development of the L.C.C.'s large estates in Hendon and Morden.

Metropolitan Boroughs.—Among the Metropolitan Boroughs the outstanding achievement is that of Woolwich, where the Council had by September 30, 1927, completed 1,483 (10) houses, and had another 466 in hand. The next largest output was the 1,138 (3.3) of Wandsworth. The contributions of the other boroughs were comparatively low in proportion to population. The City provided 316 houses, nominally 24 per 1,000 of population; but that is not the day population, but the night population of only 13,230.

Essex.—The outstanding achievement in Essex is that of the Romford Rural District Council, who built 718 (63) Addison houses. No wonder that they have done nothing under the Chamberlain and Wheatley Acts. Barking built 510 (13), Walthamstow 707 (5.6), and Ilford 502 (5).

Hertford.—Watford with 1,195 (24) houses stands far ahead of the other seven districts of Hertford County included in Greater London. Only Croydon and Woolwich beat Watford's record. The largest contributions after Watford's were Barnet 273 (22) and Hatfield Rural 360 (40).

Middlesex.—The most remarkable achievement in Middlesex is that of the Hayes Council, who have built 960 (92) houses. The next largest contributions were Ealing 752 (7.2), Tottenham 705 (4.6), Enfield 643 (10) and Willesden 603 (3.6).

Middlesex ranks next to Hertford in regard to the large proportion of its authorities, who have built more than 20 houses per 1,000 of population. Here the leaders are:—Uxbridge Rural 434 (30), Hendon Rural 495 (22), and Wealdstone 316 (21). For the whole county the number of Councils' houses per 1,000 of population seems low in comparison with other counties; but this is no doubt due to the counteracting activities of private enterprise, for in point of total output of Councils and private enterprise together, Middlesex stands easily first of all the counties; its output exceeds that of the next best county, Surrey, by about 50 per cent., and about two-thirds of this output is due to unaided private enterprise.

Kent.—There is nothing very striking to record about Kent. The largest contributors, Bexley 536 (22) and Dartford 514 (18), are far above the others. Private enterprise has done much less in Kent than in the other counties.

Surrey.—In point of number of houses built per 1,000 of population by Councils and private enterprise together, Surrey stands ahead of the other counties, but four-fifths of these houses were built by private enterprise.

The best record of all local authorities, except the L.C.C., is that of Croydon, 1,724 (8) houses. The next best in Surrey are Mitcham, 546 (14) houses, and Merton, 472 (24).

Rents of New Houses.

The rent position at the end of September, 1927, was very much the same as was

TABLE I.

PROGRESS IN PRODUCTION OF POST-WAR WORKING-CLASS HOUSES IN GREATER LONDON.

Period.	Local Authorities' Houses.		Houses Built by Subsidised Private Enterprise, Including Public Utility Societies.		Houses Built by Unassisted Private Enterprise of Rateable Value up to £35.		Total.		L.C.C. Houses Included in Column 2.	
	In the period.	To end of period.	In the period.	To end of period.	In the period.	To end of period.	In the period.	To end of period.	In the period.	To end of period.
Column 1.	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b
Up to March 31, 1924	—	28,311	—	8,018	—	12,588	—	48,937	—	8,041
From April 1, 1924, to March 31, 1925	2,676	30,987	3,481	11,499	11,417	24,005	17,574	66,511	1,472	9,513
From April 1, 1925, to Sept. 30, 1925	2,393	33,380	2,305	13,804	6,923	30,928	11,621	78,132	995	10,508
From October 1, 1925, to March 31, 1926	2,498	35,878	3,046	16,850	7,949	38,877	13,493	91,625	1,237	11,745
From April 1, 1926, to Sept. 30, 1926	4,852	40,730	4,280	21,130	8,569	47,446	17,701	109,326	2,294	14,039
From October 1, 1926, to March 31, 1927	5,717	46,447	4,380	25,510	9,024	56,470	19,121	128,427	2,505	16,544
From April 1, 1927, to Sept. 30, 1927	11,135	57,582	5,755	31,265	8,962	65,432	25,852	154,279	4,721	21,265

TABLE II.

OUTPUT OF POST-WAR WORKING-CLASS HOUSES UP TO SEPTEMBER 30, 1927.

Sources of Supply.	Total Output of Houses.			Output per Thousand of Population.				
	A.—In England and Wales.	B.—In Greater London.	Percentage of B. to A.	In England and Wales.	In Greater London.	In Birmingham.	In Liverpool.	In Manchester.
Local Authorities	383,680	57,582	15	9.82	7.34	19.00	16.30	9.44
Subsidised private enterprise	296,107	31,265	10.6	7.57	3.99	6.89	3.85	5.61
Unaided private enterprise	250,209	65,432	26.2	6.40	8.34	1.23	0.35	0.63
Total	929,996	154,279	16.6	23.79	19.67	27.12	20.50	15.68
1926 Population in round thousands	39,067	7,845	20.1	39,067	7,845	935	863	752

TABLE III.

DISTRIBUTION OF LOCAL AUTHORITIES' POST-WAR HOUSES IN GREATER LONDON.

County.	Number of Post-war Houses Completed by Local Authorities.				Population in Thousands	Total houses provided by Local Authorities per Thousand of Population.	Total number of Greater London Local Authorities in County.
	In six months to September 30, 1927.		Total up to September 30, 1927.				
	By L.C.C.	By others.	By L.C.C.	By others.			
1	2	3	4	5	6	7	8
London	985	1,413	7,320	8,943	4,615	6.55	30
Essex	2,314	437	11,436	3,936	1,022	3.85	19
Hertford	0	509	0	2,687	132	20.4	9
Middlesex	1,402	2,292	2,271	11,126	1,330	8.37	35
Kent	0	572	0	3,098	283	10.9	13
Surrey	20	1,191	238	6,527	463	14.1	20
Total Greater London	4,721	6,414	21,265	36,317	7,845	7.34	126
	11,135		57,582				
England and Wales	75,913		383,680		39,067	9.82	—

set out in the review* for the six months to March, 1927; few of the new Councils houses were available for families earning less than 70s. per week, at rents which they could properly afford to pay. There was no marked fall in London housing contract prices sanctioned by the Minister of Health before April, 1927; so no general fall in rents could be expected for houses completed before October.

The vast building operations of the six months to September, 1927, cannot but have effected a considerable improvement in the housing position in the less overcrowded parts of London. This improvement is, unfortunately, not found where it is most needed, in the more populous and densely built over districts of Inner London, where the combined output of municipal and private enterprise in the three foremost boroughs, Lewisham, Woolwich and Wandsworth, amounts to only 40, 15 and 12 houses per thousand of population, Lewisham's 40 being largely due to the L.C.C. contribution of 28. In the absence of a margin of empties, rents of decontrolled dwellings in Inner London can generally be raised to a level somewhere near that of new dwellings by reason of the great demand for homes near the chief centres of employment and the progress of redevelopment which is steadily demolishing old quarters and driving the poorer classes away from the centre. Improvement there certainly has been, even in Inner London, for the lower middle and well-paid artisan classes, who can afford high rents. There is ample evidence of this in the increasing number of "To Let" boards. But the position as regards the poorer classes in Inner London cannot have been materially affected, even by the record output of houses in the six months to last September.

The prospect of relief from bad housing has become a little brighter for some of the Metropolitan boroughs through an interesting new departure in policy on the part of their housing authorities. The L.C.C. have reserved practically the whole of their new Wormholt estate (which was originally to have been developed by Hammersmith Borough Council for the benefit of Hammersmith alone) for boroughs in which special difficulties, such as shortage of land, have hitherto prevented the borough council from dealing satisfactorily with the local housing problem for themselves. The Borough Councils of Hammersmith, Kensington, Finsbury, Hampstead, Westminster, St. Marylebone and Paddington, have undertaken to make an annual contribution towards meeting the loss incurred by the L.C.C. on this estate. In return, the L.C.C. are reserving an agreed number of houses for tenants nominated by the borough councils. The annual contribution has been tentatively fixed at £7 per house so reserved. This arrangement is capable of extension to other L.C.C. estates, and may prove very effective for relief of overcrowding in the central boroughs, if it can be combined with arrangements for securing that the dwelling from which a selected tenant is transferred is not allowed to become overcrowded again, but is used to relieve overcrowding in some smaller dwelling.

All that individuals and associations can do is as a drop in the ocean to what is needed. No improvement on a large scale is possible, except through the building industry itself. When the industry can so reorganise its operations that small houses can be built in large numbers at £400 each, all in; and when the £400 can be raised on loan at 3½ per cent., then it will be possible to provide houses at far lower rents than local authorities have to charge now to keep the burden on the public purse down to a reasonable figure; but such reorganisation will be worth while only when arrangements have been made for securing that the benefit of low rents shall be rigidly confined to those badly housed families who cannot afford more. The first step to this end is a survey of housing conditions directed towards identification of such families and the preparation of a housing programme conforming to their needs as regards size, location and rent of the houses, new or old, that must be made available for them.

* Vide *Builder* of July 15, 1927, page 102.

LEGAL QUESTIONS WE HAVE BEEN ASKED

XVI.—IS THE EMPLOYEE OF A CONTRACTOR LIABLE AT ANY TIME FOR PERSONAL NEGLIGENCE?

By W. T. CRESWELL, Barrister-at-Law, L.R.I.B.A., Associate (late Fellow) Surveyors' Institution, etc.

Negligence.

Negligence has been defined as "not doing that which a prudent man would do, or doing that which a prudent man would not do when under a duty to use care, and thereby causing damage."

An artisan or workman employed by a contractor is classed as a servant; and the law relating to master and servant is therefore applicable to his status, and it is his duty to obey the lawful instructions of the contractor and to serve him faithfully.

On his taking employment, he at once impliedly warrants that he not only possesses, but will exercise in the tasks he undertakes for his employer, reasonable skill and competence in his craft or labour. Further, it is his bounden duty to take all due and proper care of whatever property of his employer is entrusted to him for use in the work, or transport, or for storage till it is, or ceases to be, required. The failure of an employee to exercise reasonable care or skill, and resulting in damage to his employer, or his failure to take due and proper care of the property of the employer, is negligence, for which an action lies against him in damages.

Where an employee performs his work so negligently that it is useless for the purpose intended, he is not entitled to recover remuneration therefor; but when loss or damage is caused merely by accident or is due to circumstances beyond his control, he is not chargeable with neglect or breach of duty, and any loss from these causes would fall on the employer. Where an employee is *habitually* neglectful in respect to his work, he may be dismissed and without regard to the terms of his engagement.

Accident Due to Employee's Negligence.

When an accident is caused by an employee of a contractor for building works, the loss falls primarily on the contractor; the particular decision in each case depends on the special circumstances and whether the accident could have been prevented if the employee had taken such precautions as were generally customary and necessary in the circumstances at the time the accident actually took place. The tendency is to absolve the employee from any liability, especially where the latter is under the detailed supervision of others.

Employee's Breach of Trust.

It is a breach of trust, entitling the contractor to an injunction or damages, or maybe both, against an employee, who, on leaving his services, uses, against the interest of his employer, information that he has surreptitiously gained during the course of his employment; and when such information is so used, it is possible for the contractor himself to take the benefit arising therefrom and not the employee. The foregoing also applies to information acquired and retained in an employee's memory, as well as to information committed to writing and existing in a tangible form. In Alperton Rubber Co. v. Manning (1917), 86 L.J. Ch. 377, the works manager of a company manufacturing rubber goods, and rubber compounds, was entrusted with the care of a book of formulæ of secret processes for the purposes of carrying out his duties. On leaving the company's employment, he took this book away with him, and shortly afterwards entered the employment of a rival company. It was ordered that he should deliver up the book of formulæ, and all copies or extracts therefrom, to the company.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

Cleaning Stone.

[Reply to "Bank," April 6.]

Sir,—There are several patented and proprietary compounds upon the market for cleaning stonework, carvings, etc., but such work can be effectually cleaned with fine sand, grit, water, and elbow grease, and it will look as good as it did the day it was fixed. To clean the carvings, cover them with diluted spirits of salts (one part with six parts of water). Apply with a stiffish brush. Use gloves and overalls to protect the hands and clothes. Let the acid remain for a short time (two or three minutes), then wash off with clean water and a sponge, and a fine-hair brush for the undercuts. If not clean the first time, repeat the process, increasing the quantity of acid, or go over the carvings with a sharp chisel carefully and again wash off. If care is taken the stone will not suffer any injury.

Frank Jay.

Lignum Vitæ.

Sir,—Can you tell me where to purchase lignum vitæ, circular in shape, 12 in. diam., 3 in. wide? Would you also advise me as to whether this wood will be attacked if immersed in spirit such as petrol or the like? I know that it is used where sea-water has to be combated, but I should like to have your opinion on this point regarding spirits. Another point of interest is whether a temperature change of 100 deg. Fahr. would seriously affect this particular wood.

G. T.

Weather Finish.

Sir,—I am thinking of treating the outside of a brick building that lets in the weather rather badly with white cement-wash and a waterproofing material. I should like to know if this is likely to be effective, and whether the waterproofing material is likely to affect the colour of the cement.

Proof-it.

Circular Breeze Blocks.

Sir,—Is it possible anywhere to obtain 3 in. or 4 in breeze blocks made to a radius on plan? This is for the purpose of forming the circular end to a room.

Geometry.

Water Main.

Sir,—What is a fair cost for a Water Authority to charge as the price of laying a 1-in. galvanised main, per yard lineal? Is there any way of compelling them to serve a road in which there are a number of houses without company's water?

Ratepayer.

"Dook."

Sir,—I have come across the word "Dook" in connection with the carpentry work round a chimney, in a Scottish specification. Can any of your readers tell me the meaning of the term?

Sassenach.

Gas Main Question.

Sir,—Could any of your readers give me information in regard to the supply of gas and the procedure of the company in respect to laying on to the main? I have recently had a demand from a company for payment on account of piping beyond the boundary fence and between that and the meter, wherever that may be.

Inquirer.

Absorbent Paper Towels.

Sir,—A large engineering firm have asked me to fit up the lavatory to their works canteen with absorbent paper towels. Their experience is that ordinary linen roller towels become dirty beyond washing in a few days, and they have seen in use in U.S.A. square sheets of absorbent paper towels in special boxes. I should be very much obliged for any information as to where these can be obtained.

Regular Reader.

MODERNISM IN ARCHITECTURE

Sir,—The views held by "Negative" are typical of those of the "die-hard" school, who can see no merit in anything new, simply because it is new. They maintain that any form of architecture which is not based on tradition must of necessity be fallacious. But why? He assumes the fallacy without proving his assumption. Surely the aim of architecture is to produce a beautiful building, which admirably expresses its purpose and the use for which it is intended; not necessarily to conform with any particular style or fashion which may be in vogue at the moment.

In his first point of criticism "Negative" has somewhat missed the mark. It is not so much the copying that one objects to (though that certainly does lead to stagnation), but it is the adaptation of existing forms to buildings for which, by virtue of difference of scale, the forms are not suitable. For example, who has not seen the modern shop or store in which, to suit the desire of architect or client for a pretentious building, huge classic orders have been employed on the façade? The intercolumniations are governed by the steel frame behind, and almost invariably the columns are too far apart, giving an effect of weakness. Or again, a building in which the entablature appears to have been violently wrenched apart to make room for some necessary windows in the frieze. This straining after classic ornament at all costs is having a disastrous effect on modern architecture. In order to make the style fit the building, the architect is often forced to make a compromise, and, as is usual with compromises, both the internal arrangements and the external elevation have to suffer.

"Negative" thinks that modern copyists are in good company with the Renaissance copyist. It must be borne in mind, however, that the Renaissance architects were designing buildings small in scale, and using traditional materials for which the classic style was eminently suitable; spans were short and doorways, shop fronts and windows all in scale. On the other hand, modern buildings are large in scale—stone lintols could not possibly take the spans without the help of steelwork, and this is the cause of the falsity in appearance. A comparison of the old and the new Regent-street will exemplify this point. Can "Negative" honestly say that he likes the new Regent-street? Many people dislike it without knowing just why, but the real fault of Regent-street is occasioned by trying to design buildings of large scale in a style which cannot be made to fit without destroying its meaning.

"Negative" recommends the study of old files of the *Builder* for the past thirty years, but I am afraid even a comparison with late Victorian work does not cause one to feel satisfied that Regent-street and kindred buildings are all that is to be desired.

In his second point "Negative" attempts to belittle the changes which have taken place in the twentieth century. It is a common tendency to minimise the importance of modern inventions, but being contemporary we cannot get a true perspective of facts as they are to-day. A little thought, however, will show that the changes which have taken place during the last fifty years are little short of revolutionary. The early Victorian age was but little different from that of the Romans: methods of transport, of communications and of building were similar. The coming of the railway, the manufacture of steel, and the use of machinery were the first of a series of inventions and discoveries which have completely revolutionised the habits, methods of communication, and travel of the civilised world. There is a vast difference between life in the days of the stage-coach and the frenzied rush of modern days; yet "Negative" would have us believe that all this is but a "mild revolution in habit" which has occurred before, and could occur again. I am afraid I must here disagree.

The present age is unique in the world's history, and methods of building are different from those in any preceding age. It is a fallacy to state that reinforced concrete can be classified with the Egyptian and Greek post and lintol form of construction. These forms of construction had many and large points of support, whereas the more scientific methods of reinforced concrete construction allow few and slender pillars. Again, what of such typically reinforced concrete buildings such as the Centennial Hall, Breslau? In this building the reinforced concrete is treated in a plastic manner; the supports are made to grow upwards in a perfectly natural fashion, giving an effect of beauty combined with strength, yet with economy of material. This is scarcely post and lintol construction. I should advise "Negative" to see it.

It is significant that the decline in architecture which set in during the mid-Victorian era was coincident with the beginnings of the industrial revolution which has culminated in the present age of science. It is as if the Victorian architects realised that the late Georgian architecture, though eminently suitable for its age, was no longer applicable to changed conditions, but not being an inventive people, and not knowing where to change, turned their attention to past styles. Thus we had the Greek revival, the Gothic revival, and the chaos of the battle of the styles. It is the legacy of this battle of the styles from which we suffer to-day. Classicism won the day, but it is becoming increasingly evident that the classic style is not suitable for present-day needs. Hence the modern movement in favour of simplification. In America and on the Continent cornices and mouldings are being eliminated, the orders are being abolished. What is this if not a move in the direction of so-called modernism?

History, far from being in disagreement with the modern movement, goes to prove that a change in the style of architecture is bound to come in this generation. There is no halt in architecture; after a decline must come a rebirth. Having now exhausted all the revivals of past styles, there is no alternative but a new style, and this style is obviously now springing up.

With regard to the third point raised by "Negative," he does not appear to realise the extent to which concrete as a building material is steadily ousting other materials. The present age in building may be justly termed the "cement age." Floors, walls, roofs, fences, roads and bridges are being made of it in increasing numbers. The reason is not far to seek. The old crafts are dying out—there is a surplus of unskilled labour on the market, and the modern tendency is to place the working out of all thrusts and loads in the hands of skilled designers, while the execution of the work is left in the hands of unskilled labour superintended by skilled foremen. This fact, and the economy of mass production, will undoubtedly in the future cause most of our buildings to be constructed of this material.

The problem is primarily an economic one, and it is essential that architects should devote their energies to the evolution of an æsthetic expression for new methods of construction rather than attempting to stem the tide by seeking to retain the obsolete classic forms.

With regard to the present-day craze for the Georgian style, which "Negative" defends, the objection is not so much to the sash windows in particular; the objection is rather to its use for buildings which are too large in scale to suit it. The fenestration of most of these buildings treated thus to-day bears little or no relation to the constructional members, and the lighting of the rooms is invariably sacrificed to external "style." The practice of treating the main façade in a "style" and leaving the other elevations to take care of themselves is one of the curses of modern architecture.

I would ask the opponents of "modernist" architecture to study carefully some of the best of the buildings in this style in France and Germany before venturing a criticism. There are at present few examples in this country, but some are in course of erection and the time will come when many will be available. History shows that England has invariably taken inspiration in architecture from the Continent, and improved on it, and in the present case history will no doubt repeat itself.

As for modern classic, it is already dying and the future generations will probably look upon our classic work in relation to Georgian architecture somewhat as we now look upon Victorian Gothic in relation to mediæval architecture.

It is a pity that "Negative" is so complaisant about modern classic architecture. Progress, however, does not lie in that direction. It is only by being dissatisfied with the present, and attempting to improve upon it, that the present generation will be able to produce a style of architecture which will adequately express the aims, ideals and aspirations of the present age. Such a style, I maintain, will be found in the so-called modernist architecture, which, though but in its infancy, is a very healthy child indeed.

"Positive."

BUILDING METHODS

Dr. R. E. Stradling, Director of the Building Research Station at Garston, Watford, delivered an illustrated lecture by invitation of the Association of Architects, Surveyors and Technical Assistants at the Building Exhibition, Olympia, on Saturday afternoon, on the work of the Building Research Station at Garston. Mr. H. R. Surridge, president of the Association, presided.

Dr. Stradling, in his lecture, said that a tour of the exhibition impressed one with the enormous advance in the number of new building materials, but one was left with a feeling of doubt as to whether sufficient knowledge existed to enable one to take full advantage of the numerous alternatives offered. The question was, how did the advent of all these new materials affect our modern methods of construction? In the majority of our buildings the construction was much too heavy, when judged from strength requirements alone, and this extra weight had become traditional because of the other factors required for construction. The requirements of weathering resistance, heat insulation, and the like made demands often very much more serious than that demanded by strength.

The general work of the Research Station was divided into four sections: weathering, materials, structural strength, and efficiency of buildings. He drew attention to the exhibits on the stall at the exhibition. The testing of building materials was as yet in its infancy and no applied science could develop satisfactorily unless tested out step by step by application. That meant in their case criticism by practical experience. The Building Research Station existed to help the industry, but this could not be done effectively unless the industry joined hands in the work. They wanted members to visit the station and realise what work was being done; they wanted opportunities for the staff of the Research Station to visit jobs where troubles arose, for they could learn much from failure. They wanted also to join hands with the manufacturers of building materials so that specifications could be made possible in scientific terms instead of trade names. The only real safeguard for the user of materials at the present time was intelligent specification, a specification which defined the material in such a way that it should be satisfactory for the purpose for which it was desired. He was not appealing for paid investigations, but for co-operation to get more scientific work into building.

THE BUILDING TRADE

EVERYDAY SCIENCE FOR ARCHITECTS AND BUILDERS—XV

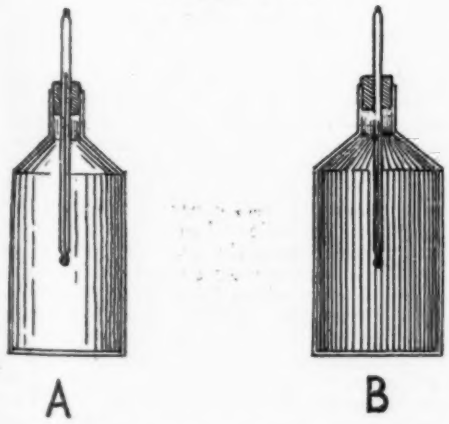
By A. M. Giles, B.Sc., A.I.Struct.E., A.M.I.E.E.
Diagrams and Illustrations by M. R. Dumville.

Convection.

This method of transferring heat from one place to another has really been considered when we were dealing with the expansion of liquids and gases. In this case the heat was transferred by "convection currents," which were set up in water and air. Methods of warming a room or building by convection currents in air cannot be considered particularly satisfactory, though, in the case of water, we realise that heat is transferred from boiler to radiators by convection currents set up by density differences. It is interesting to note, though, that liquids, with the exception of mercury, and gases are bad conductors of heat. For example, it is possible to have the two extremes of temperature, viz., freezing point and boiling point, in the same quantity of water and at the same time.

Tie a sinker, i.e., a piece of lead or any substance with a high specific gravity, to a piece of ice. This will cause the ice to sink and to remain at the bottom of a quantity of water contained in a glass test-tube. Now, by the careful application of the heat of a bunsen flame to the glass near the top of the water, it is possible to boil the water there while the piece of ice at the bottom will keep the temperature there at freezing point. Since the water is being heated at the top, convection currents would not be set up, and the method by which heat could get to the bottom of the tube would be by conduction,

FIG. 49.



and as glass is also a bad conductor of heat, this would take a considerable time.

Radiation.

Heat is transferred by radiation, and, without actually repeating the definition given in the previous article, let us emphasise as much as possible, so as to get it thoroughly understood, that a material medium is not necessary for the transference of heat by radiation. The heat from a fireplace would reach us just the same, possibly a bit better, if there were no air in between us and the fire. As we said at the beginning of the section dealing with heat (Article No. VII, page 346), heat is a form of energy, and it is transferred through the space intervening between any two places by a series of waves which take place in the ether. We hear thunder because of a series of waves which pass through the air, that is, between us and the thunder. In this case air, the material medium, is necessary for the sound waves to travel to us. If there were no air, we should not hear the thunder, but we should see the lightning. Light and radiant heat travel in a similar manner, i.e., by waves taking place in the ether, the only difference being that light waves are not as long as heat waves. The length of a water-wave is easily seen by the eye, but it is difficult to appreciate the length of a heat-wave when we know that there may be anything up to 30,000 in the length of 1 in. Heat and light waves reach us from the sun through many millions of miles of ether. The comparatively thin layer of air around the earth has little or no effect upon the passage of these ether waves of heat and light.

Just as light waves can be brought to a focus, so it is possible to focus the sun's heat rays to any required point. Everyone is familiar with the burning-glass experiment, in which a convex glass lens collects the sun's rays of heat and light falling upon it and focuses or concentrates them at a point. Another way by which these rays can be brought to a focus is by means of a concave reflector. The parallel rays of heat and light from the sun, falling upon the hollow reflector, will be brought to a focus at a point in front of the reflector (a reflector of parabolic section is the best for this purpose).

The converse of this is that, if a source of heat be placed at the focus of a parabolic reflector, parallel rays of heat will be sent out forming a heat beam. This has been put to practical use in what we may call the "beam" heating apparatus. Figure 50 is an illustration of this "beam" heating apparatus The source of heat, placed at or near the focus, may be electric, as in the diagram, or gas. Both kinds are on the market. They are of little use for general heating, but, for concentrating heat at any particular place, they are quite efficient.

An electric arc lamp gives out both heat and light rays, and by suitable apparatus it is quite easy to bring them to a focus. A spherical glass bowl of water will act as a convex lens, and by it the heat and light rays from the arc may be brought to a focus. It is possible to separate the heat rays from the light rays and a demonstration experiment that is sometimes performed is to do so by placing in front of the lantern a spherical glass flask containing iodine dissolved in an evil-smelling liquid called carbon bisulphide. This solution will absorb the light rays but allow the heat rays to pass through and be brought to a focus. The heat from an arc lamp, concentrated at a focus in this way, is sufficiently great to melt even platinum.

In a similar manner it is possible to pass the rays from an arc lamp through something that will absorb, to a large extent, the heat rays but allow the light rays to pass through. This is very often necessary when the arc lamp is used in a film lantern or a magic lantern, and it is sometimes done by placing a water screen in between the lamp and the film or slide.

This brings us to the consideration of what effect the air has upon the heat radiated from the sun. The earth is warmed by the absorption of radiant heat from the sun. Dry air is not warmed by the sun's rays as they pass through it, e.g., in the Arctic regions it has been known that, when the temperature is many degrees below zero, the sun's heat will cause a tar surface to melt. (This is a special case of absorption which will be mentioned again presently.) When the air is charged with moisture particles it does absorb some of the sun's heat rays as they pass through it.

Glass.

The effect of glass upon radiant heat is of particular interest. It allows heat rays which have been radiated from sources of high temperature, such as the sun and a red-hot fire, to pass through it, but stops those radiated from a low-temperature source. Our greenhouses or glasshouses, then, act as traps for the sun's radiant heat rays, which will pass into the glasshouse and be absorbed by the materials inside, but will not pass out again because they are re-radiated from low-temperature sources. This, then, gives us one reason for not placing windows directly opposite fireplaces. The consideration of transference of heat by radiation has been discussed somewhat at length as there are many small builders who are also the heating engineers for their particular locality, and it is hoped that a thorough grasp of the principles of radiant heat may be helpful.

Absorption and Radiation.

No two substances absorb or radiate heat to the same extent. A surface coating of lamp-black is a good absorbing agent as well as a good radiating surface. It is, in some cases, perhaps, unfortunate that good absorbing surfaces are also good radiating surfaces. Brightly polished surfaces, in addition to being bad for both absorption and radiation, are good reflectors; therefore in the "beam" heating apparatus (Fig. 50) it is an advan-

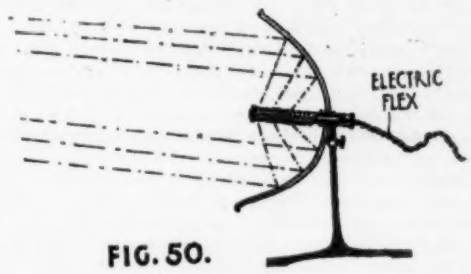


FIG. 50.

tage to keep the inside surfaces of the reflector well polished. There are many experiments for demonstrating the above statements, but it is sufficient for us briefly to describe just one of them.

Figure 49 is an illustration of two metal cans. "A" has a bright polished surface while "B" has a black "matted" surface. Both cans are filled with cold water so that the thermometers register the same temperature. They are then placed in front of the fire, each standing on a non-conducting material such as a disc of asbestos. It will very soon be noticed that the temperature of the water in the black can is rising very much quicker than the other, which shows that the black surface absorbs heat much better and quicker than the bright one. Next, empty the cans and fill them with very hot water, so the thermometers again register the same temperature. Arrange for them to stand on an asbestos disc at some distance from any heat source. It will soon be seen that the temperature of the water in the black can is falling much quicker than that in the other, thus showing that the black surface radiates heat much better than the bright one. The applications of this experiment should be fairly obvious, and it surely is only necessary for us to mention such things as the surface of heat radiators of all kinds, the surfaces of cooking utensils, the whitewashing of the roofs of workrooms, etc., in the summer time, and so on.

In the heating of our rooms by radiators the three methods of transferring heat are involved. Heat is conveyed by convection currents from the boiler to the radiators, it is conveyed to the outside of the radiators by conduction, and finally it is radiated from the surface of the radiator as well as being carried away by air convection currents.

FACTORS IN INDUSTRIAL AND COMMERCIAL EFFICIENCY

The Committee appointed in 1924 by the Labour Government under the chairmanship of Sir Arthur Balfour to inquire into the conditions and prospects of British industry and commerce, with special reference to the export trade, has recently issued a fourth volume, entitled "Further Factors in Industrial and Commercial Efficiency," which appears to contain matter of much interest. We noticed in detail, in our issue for April 30, 1926, the second volume of this series, which contained most instructive statistics, and the present volume again deals with questions of great public interest, such as the costs of production and distribution, transport facilities, public trading enterprise, etc. It has, however, to be remembered that in these volumes the Committee, as is stated again in the Introduction to this volume, "have deliberately refrained from formulating conclusions or making recommendations as to the conduct of particular industries or the relation of one to another, a part of their duty which belongs to and is reserved for their final Report." Particular interest attaches to this volume, because since the publication of the last volume the preliminary results of the Census of Production of 1924 have become available, and the Committee's observations on, and the deductions drawn from, those figures are very important.

Output.

This volume of 360 pages requires close study, and in the space at our disposal we can only refer to a few of the general conclusions arrived at by the Committee without referring to the data which lead to those conclusions. The Committee find that the net output, that is, the gross output less the cost of materials purchased and used, and the amount paid for work given out, in the industries set out at page 48, which include mining and quarrying; brick, pottery and glass; metals, machines, implements and conveyances; textiles; skins and leather; clothing; food, drink and tobacco; woodworking, papermaking, printing and bookbinding; and "other manufacturing industries," allowing for the increase in the number of persons employed between the years 1907 and 1924, shows little increase per head. This is distinct, of course, from the money value, which has been affected by the depreciation in the value of money. There is, however, a note or observation on the point which is of considerable importance, as it is pointed out that the per capita output is calculated on the total number on the *pay roll* and not on the number of "equivalent full-time workers," and as 1924 was a year of depression, as compared with 1907, if both years had been calculated on full-time workers this would make the results somewhat different. It is also pointed out that if mining were excluded and the per capita output confined to manufacturing industry proper, a considerably greater rate of increase would be shown.

Output and Mechanical Power.

The Report points out that the mechanical power at the service of industry in 1924, as compared with 1907—that is to say, the capacity of engines installed—showed a much greater increase than the per capita production, showing an increase from something under 8,000,000 horse-power to 13½, which measured per head of the persons employed represents a power capacity rise of about one-half, and although the Committee observe that it is not to be expected that the productivity of an industry will increase in direct proportion to the increase of mechanical power, yet they point out that in the United States between 1904 and 1925 the rates of increase of net industrial production and horse-power per head of the employees were almost identical, that is, about 64 per cent., and this affords ground for inquiry whether full advantage has been taken of the increased power available, and whether some other factor may not have simultaneously operated to limit the per capita production of industry. We are unable to follow this subject further here, but we may mention that if the industries above mentioned were divided into two groups: (1) the exporting trade, and (2) all others, the Report states that there is a great difference between the two groups, for whilst in the first the net productivity per head shows very little change, in the latter group it has increased by over a quarter, and this is attributed in no small degree to the inclusion of mining in the first of the two groups, and if it were excluded from the first group the net output per head would also be shown to have increased appreciably. The two groups were marked *A* and *B*. Of the 5½ millions of persons covered by the returns for 1924, four-fifths are in Group *A* and one-fifth in Group *B*. The increase in numbers in the two groups between 1907 and 1924 were 18 per cent. in Group *A* and 16 per cent. in Group *B*. The increase in horse power available in Group *A* was 54 per cent., and in Group *B* 71 per cent. The net productivity per head showed very little change in Group *A*, but increased by over a quarter in Group *B*.

Costs of Production.

It would be very little use in a summary to enter into the portion of the Report which deals with costs of production, as the Tables must be consulted which, coupled with the Report, show the effect of various causes, such as the cost of raw material or the increased cost of overhead charges, which affect industries differently according to slack times; but in the Introduction it is stated that without great risk of error it can be inferred that in the great exporting trades between 1913 and 1925, the average rise of industrial costs has been about 80 to 90 per cent. Again, the Report states that in the great exporting trades, as a whole, in 1925 the average proportion borne to total cost by the wages of labour directly or indirectly employed on production in the undertakings is in the neighbourhood of 30 to 40 per cent.

Between 1913 and 1925, in the case of many of the undertakings considered, the wages cost per unit has, on the average, increased by about 90 per cent., but in particular industries the amount varies considerably, and an interesting inquiry is contained in the Report as to how it is that in all the great groups with the possible exception of iron and steel, shipbuilding and general engineering, the rate of increase of the labour cost per unit exceeds the rise in the same period in the rates of money wages for a full week's work, which was found in the "Survey of Industrial Relations" to average in all industries about 70 to 75 increase.

After carefully balancing all the causes which have operated to produce or reduce this result, the Report finds that it is difficult to resist the conclusion that the residual factor accounting at any rate for part if not of the whole of this increase in the "real" cost of labour in production is to be found in the reduction of the length of the working week which in the period under review has averaged about 10 per cent. Therefore, speaking generally, it is found this reduction has not been fully offset by increased productivity per hour. One of the most interesting sections of this Report will be found to be that under the heading "Costs of Distribution," in which the addition to the manufacturer's price which the home consumer has to pay is considered with reference to the actual costs of distribution and the profit remaining, but in this section we do not find any explanation of a fact that is troubling the ignorant of the considerable margin between the prices of export coal and those charged to the home consumer. The home consumer is haunted by the idea that he is being called upon to subsidise the export trade, as the difference in price appears far too large to be expended on costs of distribution.

We are compelled to pass over other interesting sections, such as "over-capitalisation," "industrial mobility," and others, and to turn to the

Concluding Summary

contained in this volume, pending the recommendations which will be contained in the Final Report, and which will be of supreme interest. The summary states that the survey of British industries which will be concluded in six volumes will probably leave a different impression on readers of different types of mind; and, roughly speaking, the types indicated are those who look less for effective remedies to the trades themselves than to action by the community as a whole, and those who think that the maximum effort has not yet been achieved towards attaining the most efficient production at the lowest cost by the trades themselves. Possibly a third school is indicated when those are spoken of who will rest their main hopes of improvement on the fuller recognition by all classes of participants in production and distribution of the facts that the war has made the world poorer and that it is in vain to imagine that the inhabitants of a much poorer world can live as well or as easily as before the impoverishment took place. This observation, we think, must have a wide signification attached to "participants in production and distribution," and must also be addressed to all classes of consumers, especially those who set up an imaginary standard of living which is not to be disturbed by hard economic facts.

The Committee observe that it may be doubted whether these views are really so antagonistic and mutually exclusive as at first sight they may appear, as there is at least a good deal of common ground, and the distinction between what a trade can do for itself and what must be done for it by the community cannot be defined by a hard and fast line. The Report continues: "For the purpose of the present inquiry the only really fundamental cleavage is between those who, whatever may be their ultimate economic aims, start from the basis of existing conditions and endeavour to improve, or it may be to transform, these conditions, and those (a very small minority in this country) who believe that the best service that can be rendered to humanity is to make the present economic organisation unworkable, and thus to hasten the day when it will be superseded by some other structure. The difference is fundamental because there can be no common measure between proposals aimed at the improvement of society and those aimed at its dissolution."

It will be obvious that this Report contains matter of very great interest, of which we have only indicated some very few points, and those imperfectly, and we can only end by a reference to some observations contained in the Report which bear on municipal trading. Under the heading "Public Trading," the Committee state that the general result of the survey is to show that the trading activities of the public authorities considered in this section are fairly closely limited to enterprises of the "public utility" order which involve an element of quasi-monopoly, that within the area so circumscribed they have not lagged behind and in some cases have outdistanced private enterprise in the rate of progress as tested by the ordinary criteria, but to this statement certain qualifications ought to be made: where, as in electricity supply, the public interest has come to require a great enlargement of area and the amalgamation of undertakings, the resistance of local vested interests may be more harmful because more powerful when voiced by public authorities than by private undertakings. Where, again, a particular form of service tends to be superseded by an alternative form it may be more difficult to realise the advantage of the change where the obsolescent service is in the hands of a local authority.

This latter objection seems to us one of the greatest importance, and in many cases the tramways afford the best illustration. The tramway is being superseded by the motor omnibus, but the ratepayers' money

is invested in tramways and a change must necessitate a fresh call on the rates. At the present time this is impracticable, and therefore an obsolescent system which with lines laid in the public streets is contrary to public interest is clung to.

Again, possibly in this inquiry the Committee considered only the larger municipalities, which no doubt can compare very favourably with any form of private enterprise, but we wonder whether the Committee can be aware of the charges for gas and electricity which are being made by some of the smaller municipalities at the present time which are more than double those charged in the larger towns and have receded but little since the general strike.

CLERKS OF WORKS ASSOCIATION.

ANNUAL DINNER.

The forty-fifth annual dinner of the Incorporated Clerks of Works' Association of Great Britain, last Saturday, brought together an assemblage of about 400 persons, filling the King's Hall of the Holborn Restaurant. Mr. F. Adams Smith, F.R.I.B.A., F.S.I. (Master of the Worshipful Company of Carpenters) occupied the chair.

The banquet being concluded and the King's health proposed by the Chairman and duly honoured, the next toast was that of "The Architects and Surveyors." Mr. W. J. Bale proposed this, saying that to these guests the Association extended a sincere and hearty welcome. The building industry, in one branch or another of which all present were interested, was one of the oldest known to mankind. It should be an object with those engaged in it to adorn our cities and countryside with objects of art for the benefit of the present and future generations.

Mr. E. C. P. Monson, responding for the architects, said clerks of works always had the architect with them: sometimes perhaps when they would be glad to get rid of him. If it were not for the co-operation of the clerk of works the architect would now and then have a thin time, for though he might go and see the job once or twice a week he could not look into all the little holes and corners. But the clerk of works was there and saw that the architect got the job for which the client had to pay. Architects had had a disappointment lately in connection with the Architects' Registration Bill; but, personally, he thought it a good thing that Bill had not gone through, for it would have been worth nothing: it would have protected the title "registered architect," but architects were out to have the title "architect" protected. The proposer had spoken of the countryside. Our countryside needed protection; an awful lot of most mean and unsightly buildings were being put up. The position was worse because of "ribbon development: building all along the main roads." He would not say this could be obviated by clerks of works, but everybody possessing interest with local authorities should do his best.

Mr. Hugh Watkins said a matter of interest to clerks and surveyors was the proposal for a universal system of measuring quantities for the British Empire. He had tried quantities in Africa, Australia, India and Canada as well as in Wales, Ireland and Scotland, and he thought it would be very difficult to get a system applicable to every part of the Empire. In Calcutta the labourer got just over ½d. per hour and the skilled workman about 2½d. In Canada wages were sometimes fifty times as much; so that when talking of quantities in Calcutta labour items did not matter very much, but in Canada they mattered a great deal. With materials you got the same difference. In Calcutta he had been asked to measure for a flat roof which comprised lime, sand, treacle and bird seed. He could assure his audience that was a very practicable roof in India, but it would not "go" in Canada. There was undoubtedly a very great future for quantity surveyors in the Empire if you could only persuade the Empire to use quantity surveyors, but in most of the colonies, and in practically all foreign countries, there were no quantity surveyors Ten years ago he had gone over to Canada to do some work in connection with the Parliament buildings, and while on that side of the Atlantic he had gone on to Chicago and formed the "Guaranteed Quantities Association." He had done a lot of work in Canada and America, but when he left there was no one who could follow on. This was because no training was given in the business. Amongst his present audience there were youngsters with a good grounding in their business as quantity surveyors, and there was a bright prospect for any such who went out to America or Canada.

The Chairman, proposing "The Incorporated Clerks of Works Association of Great Britain," said among clerks of works were men of high character and sound judgment who could be trusted to act on their own responsibility when a problem arose and the architect was absent. One matter he had to bring to the notice of the assembly was that of finance. In connection with the Association there was a Benevolent Fund. At the end of 1926 this fund had had a surplus of £357, but at the end of 1927 this had fallen to £201.

Mr. W. Lewis Tett (President I.C.W.A.) said it would be superfluous to say how the clerks of works welcomed the presence of the architect. Not only did they regard him as an employer but in 999 cases in 1,000 the architect knew how to treat his lieutenant the clerk of works.

Mr. T. S. Henley (Secretary I.C.W.A.), who proposed "The Worshipful Company of Carpenters," said that no ambitious young man should miss the opportunity of attending the lectures given by that Company, or of taking their examinations. He thanked the Carpenters' Company for the kind help they extended to the Association by giving them the use of their hall.

Lieut.-Col. A. C. Preston said it gave the Carpenters' Company the greatest pleasure to receive the clerks of works in their hall.

Mr. P. J. Luxton (vice-president I.C.W.A.) proposed the toast of "The Builders."

Major R. J. Holliday, who replied, said that at no time had there been a greater necessity for highly-trained men in every walk of the industry, and the Clerks of Works' Association was doing good work assisting its younger members to acquire the technical knowledge they needed.

Mr. H. W. Page (Past-President I.C.W.A.) proposed the health of the visitors and the ladies.

Alderman W. Peet responded for this toast. He said many of the visitors must have wondered what kind of association the Incorporated Clerks of Works' Association was. One of its primary objects was to secure for its members continuity of employment, and to keep them primed up in modern methods. Another object was to maintain its benevolent fund.

Mr. J. G. Russell proposed the toast of "The Chairman," which was very heartily responded to.

The Chairman briefly acknowledged the compliment.

The total contributions to the Benevolent Fund during the dinner amounted to £75 10s. 6d.

SURVEYING AS APPLIED TO AMERICAN CONSTRUCTION

In an address before the New York State Association of Builders, Mr. G. Szmak, of the American Institute of Quantity Surveyors, defined and outlined the benefits and applications of construction surveys. He said that the construction industry was, to a great extent, what the builder made it. If conditions in the industry were in a deplorable state, it was within the power of the builder to bring about a more ethical, efficient and economical progress. The most irritating problems before the builder were unfair competition, inefficiency, and high cost production. To solve these it was necessary to discard the old ways and means of doing business. This was, no doubt, a difficult thing to ask the builder to do. He had been forced by custom to believe that the uncertainties of his business were real and took it for granted that he was in a gambling game. Even to suggest otherwise to most builders met with doubt and suspicion.

Unfair competition, with its many bad results, did not start with the builder and would not end with him, in spite of the beliefs to the contrary. Good business, as well as bad business, started with the client. The builder who had the courage to demand a positive instrument of purchase would get it. This same builder would have also the courage and knowledge to provide a first-class service. A positive instrument of purchase would aid him to do it. No one could object to the fair competition that is brought about through the use of a professional survey. The majority of the builders' disrupting problems would be solved by this method of doing business. Reputable architects were in favour of furnishing a construction survey with the plans and specifications just as soon as reputable builders asked for it. Construction would not cease on account of a request for a survey, and, what was more, the best jobs would always go to the best builder more than ever before. Business had always to be done, and it evolved the builder, and not the builder the business. Construction surveying was the science of measurement, tabulation and analysis by uniform units applied to the quantity and quality of material and workmanship in the physical members of a civil structure. The professional survey was a written interpretation of the physical parts of a structure. It was intended to be just as universally understood by the user as the drawings were and to give him a mental picture of the structure beyond all doubt.

Surveys had, among many others, the following advantages:—They encouraged honesty by exposing the facts otherwise unknown to buyer and seller; created fairness in competition by positively showing that quantity and quality, and not price, were the basis of fair competition; provided accurate preliminary records on the relative values of material and workmanship, essential for economical design; produced future reference records which were valuable for arbitration, investigation and valuation purposes; prevented costly errors and omissions; interpreted plans and specifications into the everyday language of buyer and seller; simplified by systematic classification of the actual requirements; eliminated wasteful duplication in contract instruments. Some questions that had been raised relative to professional surveys, said the lecturer, were: Who should control surveying, the architect or the builder; and what was the attitude of each towards the use of surveys? The fact that neither the architect nor the builder was responsible for the preparation of a professional survey was the most essential thing in its favour and made the survey valuable as a non-partial equalising medium.

Could, were, or should professional surveys be guaranteed? The surveyor, as an indication of true competency, was ready to guarantee his survey. The form of guarantee was a matter of choice left to the selection of the client, architect or builder.

Who paid the cost of surveys? The cost of the survey was paid by the client in any case, and the more directly he paid it the less it cost. The surveyor's fee might be paid by the client, incorporated within the fee of the architect or specified to be included within the contract of the builder. This fee was saved several times over through the elimination of waste. Any professional surveyor would provide the architect with the information necessary for specifying the construction survey as part of the contract.

Under what forms of contract might surveys be used? Construction surveys were used on lump-sum, cost plus percentage, unit price, or any other form of contract. The survey in any case performed its economic function.

NEW BUILDINGS IN LONDON

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned.

Colindale. — Premises. — The Hendon Licensing Justices have granted an application by the Cannon Brewery Co., Ltd., for the transference of the licence of the Chandos Arms to a new building, to be known as the New Chandos. The architects are Messrs. William Bradford & Sons, 12, Regent-street, W.1.

Croydon.—Improvements. — The Central Baths in Scarbrook-road, Croydon, which belong to the Borough Council, are to be improved at a cost of £24,500.

Fulham.—Chapel.—The scheme for the provision of a Church of England chapel at the Fulham Cemetery, Sheen, is developing. The Church Council of the Parish Church have approved of the scheme.

Harringay.—Additions.—The contract for the large addition to the factory of the Associated Piano Manufacturers, Ltd., has been placed with Messrs. Industrial Constructions, Ltd., 44, Grosvenor-place, S.W.1.

Harrow-road.—Extension.—Messrs. E. B. Holmes & Co., Ltd., of 155, Mare-street, Hackney, have secured the contract for extension of premises for the Metropolitan Boot Co., Ltd., Broad-lane, Tottenham, under the supervision of the company's architect, Mr. H. G. Cherry, F.R.I.B.A., 7, Buckingham-street, Adelphi, W.C. 2.

Hornsey.—Building.—A new Y.M.C.A. building is to be erected on a central site in Hornsey. It will have sleeping accommodation for 60 men, each with a room to himself.

Hoxton.—Offices.—A large site in Shepherdess-walk, City-road, E.C.1, has been purchased by Messrs. Pilkington Bros., Ltd., who propose to build a large London warehouse and offices Plans have been prepared by Sir John W. Simpson, PP.R.I.B.A., 3, Verulam-buildings, W.C.

Kensington.—Additions.—The Kensington Borough Council has approved the Improvements Committee's recommendation for the carrying out of certain alterations to the old Vestry Hall for the purpose of providing additional accommodation at the Central Library. The cost of the work is estimated at £4,000.

Leadenhall-street.—Rebuilding.—The Midland Bank, Ltd., announce their intention of vacating their branch offices at 144, Leadenhall-street, E.C.3, prior to rebuilding and extension operations. The new building has been designed by Messrs. Whinney, Son & Austen Hall, 8, Old Jewry, E.C.2.

Little Pulteney-street.—Garages.—Messrs. Lex Garages, Ltd., has been registered to acquire various garages in London, and also to erect several new ones. The largest proposal is for a new garage and filling station, with residential and club accommodation for chauffeurs, on a site in Little Pulteney-street, Lexington-street, and Silver-place, W.1. This building will accommodate 1,000 cars on four floors, and will cost £130,000. The garage premises in St. John's Wood-road, N.W., are to be extended to accommodate 230 cars; whilst a further scheme is for a new garage for 170 cars, petrol station, and showrooms in Wellington-road and Cochrane-street, N.W.1. The contract for the Little Pulteney-street garage has been placed with Messrs. Sabey & Son, 100, Great Russell-street, W.C.1. The plans have been prepared by Mr. Robert Sharp, L.R.I.B.A., 23, Victoria-street, S.W.1, in collaboration with Messrs. J. J. Joass, F.R.I.B.A., 40, St. James's-place, S.W.1.

Marylebone.—Garages.—Mr. Claude M. Leigh, F.A.I., 16, Hanover-square, W.1, is connected with interests that propose to build a large motor garage, etc., on a site in Marylebone-road, Upper Gloucester-place, and New-street, W.

New Malden.—Church.—The foundation-stone has been laid for a new Sunday School in Malden-road and Cambridge-road, S.W., to cost £5,500, to be followed shortly by the erection of a church to cost a further £5,000. The builders are Messrs. H. Somerford & Son, Ltd., 104, Manor-road, S.W.4. The plans have been prepared by Mr. George E. Withers, F.R.I.B.A., 50, Cannon-street, E.C.4.

Southwark.—Institute.—In connection with St. Stephen's Church, Mr. R. J. Rowley, contractor, Belmont Works, Tottenham, N.15, is building St. Stephen's Hall in Hankey-place, to the design of Messrs. W. H. Woodroffe & Son, F. & A.R.I.B.A., architects, Bedford-row, W.C.1. The steelwork is being supplied by Messrs. Young & Co., 6, Queen Anne's-gate, S.W.1.

St. Pancras.—Dwellings.—For erection of the superstructure for a block of dwellings at Ossulton-street, St Pancras, the L.C.C. are inviting tenders. Mr. G. Topham Forrest, F.R.I.B.A., is the architect for the scheme.

Poplar.—Baths.—New public baths and washhouses are to be constructed in Weston-street, Bromley-by-Bow, for the Poplar Borough Council. Application for bills of quantities are to be made to the Borough Engineer, Mr. H. Heckford.

Upper Thames-street. — Rebuilding.—Messrs. Gee, Walker and Slater, Ltd., have secured the contract for the rebuilding of a portion of 78, Upper Thames-street, E.C., referred to in our issue of February 18, 1927. Messrs. S. H. White and Son are the consulting engineers, and Messrs. Gunton and Gunton are the architects.

Waterloo-road.—Hostel. — The Salvation Army are to build a large hostel, with dining and recreation rooms, etc., on the site of 259-265, Waterloo-road, S.E.1, to the designs of their architect, Mr. Alexander Gordon, 97, Queen Victoria-street, E.C.4. The builders are Messrs. H. and J. Taylor, 177, Lewisham-road, S.E.13.

West Ham.—Extensions.—Tenders are now being invited by the West Ham Council for extensions to the fire brigade station in North Woolwich-road, Silvertown.

West Norwood.—Mr. A. E. Abrahams, 25, Shaftesbury-avenue, W.1, has acquired a large site in Norwood-road, S.E., where a new "super" cinema, to be called the "Regal," will be built.

White Lion-street. — Building. — Messrs. Lawsons, Ltd., the Dundee warehousemen, have decided to build a large warehouse on a site in White Lion-street, E.C.2, to plans prepared by Mr. M. Evans, 57, Chancery-lane, W.C.2. The contract, amounting to about £45,000, has been placed with Messrs. H. G. Cooper, Ltd., 6, Lime-street-square, E.C.3. The quantities have been prepared by Mr. H. W. Langdon, 57, Chancery-lane, W.C.

Wimbledon.—Rebuilding.—Messrs. Potter & Co. are to rebuild their premises and showrooms in Merton-road, S.W. Plans have been prepared by Mr. S. Day, Lensfield, Wandle-road, Morden. The builders are Messrs James Burges & Son, Wycliffe-road, S.W.19.

Report on Enamel-zinc Sheets.

The Report of the Standing Committee respecting enamel-zinc sheets has now been published, price 2d., by H.M. Stationery Office. The Committee are of opinion that the Order-in-Council should require that where imported enamel-zinc sheets are sold or exposed for sale in boxes, crates or other containers or wrappers, the box, crate or other container or wrapper should bear an indication of origin in a conspicuous manner They consider that imported enamel-zinc sheets sold or exposed for sale otherwise than in a container or wrapper should be required to bear conspicuously on the front of each sheet an indication of origin either marked on the sheet itself or on a label affixed thereto.

They recommend, however, that an exemption from the marking requirement should be provided for a sale of six sheets or less.

COST OF SUBSIDY HOUSES

A circular has been issued to local authorities by the Minister of Health in connection with the administration of schemes for assisting private enterprise in the provision of houses. In the Circular 755, of January 1, 1927, local authorities were instructed that it should be made a definite condition of subsidy, in certificates issued after the date of receipt of that circular, that the net selling price of houses included in such certificates should not exceed £550, exclusive of subsidy, or, where the houses were not to be sold, that the gross cost should not exceed £625, where a subsidy of £75 was being paid.

The Minister now states that in the former case (where the governing condition attached to the preliminary certificate is that of a maximum selling price) the net selling price of £550 will remain unaffected by any alterations in the amount of the grants given by local authorities, which have been made as a result of the reduction in the Exchequer contribution for houses completed after September 30, 1927. In the latter case, where the governing condition is that of a maximum gross cost, it will be appreciated that the gross cost of the houses falls to be reduced by the amount of any reduction of grants made by local authorities, and care should be taken to ensure that this reduction in the maximum gross cost is made clear to applicants when preliminary certificates are issued. The local authority will appreciate that, in the case of certificates issued since the date of receipt of the Circular 755, the observance of the conditions as to gross maximum cost or net selling price is a condition of the payment of Exchequer subsidy to the local authority, and in their claims for such subsidy the local authority are required to certify that they are satisfied that these conditions have been observed.

The Minister reminds the local authorities that the maximum figures referred to are to be inclusive of every payment made in respect of the house (and land), and that it is not permissible for separate arrangements to be made between the builder and his purchaser for the payment of additional sums. He suggests that the promise of assistance given by the local authority should clearly specify that the maximum figure of gross cost or net selling price is an all-in figure, and that any arrangements for the payment or receipt of additional sums will involve forfeiture of the subsidy.

Bristol Plumbers at Dinner.

Mr. Vaughan presided over the annual dinner of the Bristol and District Association of Master Plumbers, held at St. Stephen's Restaurant, Bristol. Mr. H. J. White proposed the toast of "The Bristol Society of Architects," and Mr. C. F. W. Dening, F.R.I.B.A., responding, said that a hundred years ago lead had not been brought into their work, only iron being used. There were some good examples of the work done in those days still to be seen in the city. Mr. W. A. Andrews, of the Merchant Venturers' Technical College, said that this year they had a fifth year plumbers' class, and the students who were taking that class were going to enter for the City of London examination, the first time for some years.

Scottish Plasterers' Wages.

By an award of the Industrial Court, issued recently, plasterers' wages in Scotland are to be reduced by a halfpenny per hour from May 1. The present rates are 1s. 9d. per hour in the 24 larger towns, and from 1s. 7d. to 1s. 8½d. per hour elsewhere. The employers, represented by the Scottish Master Plasterers' Association, asked for a reduction of 1½d. per hour on existing rates, and the Scottish National Operative Plasterers' Federal Union, on behalf of the workers, for an increase of 2d. per hour.

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]

	Masons.	Brick-layers.	Car-penters Joiners.	Plas-terers.	Slaters.	Plum-bers.	Pain-ters.	Lab-ourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Alfreton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Alnwick	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Ashford Kent	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Ashington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Aylesbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Aylsham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Banbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Barnstaple	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Basingstoke	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Berwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bexhill	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bradford-on-Avon	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Braintree	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bridlington	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bromsgrove	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bromyard	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bungay	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Buxton	1/7	1/7	1/7	1/7	1/7	1/7	1/5½	1/1¼
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Canterbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Carlisle	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/6	1/1¼
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1¼
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Chorley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Cirencester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Clacton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Colchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Cranbrook	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cromer	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Deal	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Denbigh	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Devizes	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Dorchester	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dorking	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Dovercourt	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Driffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Droitwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Eastbourne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
E. Glam. (Mon. Val.)	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Ely	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Exeter	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Exmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Fakenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Felixstowe	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Frome	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Glossop	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Godalming	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Goole	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Gosport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Harpenden	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Harwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hatfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hednesford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Hereford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/0
Herne Bay	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hertford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hitchin	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hoddesdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Holt	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Hunstanton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Huntingdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Isle of Wight	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¾
Keighley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Kettering	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kidderminster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
King's Lynn	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Leighton-Buzzard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Littlehampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2¾
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
London:								
12 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
12-15 m. radius	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Lowestoft	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Luton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Macclesfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Malvern	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Margate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Market Harb'rough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Matlock	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Melton Constable	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Melton Mowbray	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Newark	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Newcastle-ur-Lyme	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
New Forest	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Norwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Nuneaton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Paignton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Peterborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Portsmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Ramsgate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Reading	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Redcar	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Redditch	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Reigate	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Retford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ripon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Saffron Walden	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
St. Albans	1/6	1/6	1/6	1/6	1/7½	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Sawbridgeworth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Saxmundham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Sevenoaks	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sittingbourne	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stevenage	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stourbridge	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stourport	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stowmarket	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Stratford-on-Avon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stroud	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Swaffham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Swindon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1¼
Tamworth	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Taunton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Thetford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Torquay	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Totnes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Trowbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Uttoxeter	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Wallsend	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Warminster	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Warwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wells (Norfolk)	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Welwyn Gar. City	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Weston-sup.-Mare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¾
Weymouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/1¾
Whitby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Winchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/1¾
Windsor	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¾
Wisbech	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Woodbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worksop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worthing	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/1¾
Wrexham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Wroxham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¾
Wymondham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾

For rates of wages in the Building Trade in Scotland, see page 713.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

APRIL 23.

Blackrock.—Alterations.—To Blackrock Seawater Baths, erection of concrete stands for seating accommodation, with dressing-rooms and sanitary conveniences, and platform for diving, for U.D.C. S.

Cavan.—Repairs.—Also alterations at Cavan Court House, for C.C. P. Reilly, secretary.

Clutton.—Lighting.—Installation of electric light at Institution, for B.G. T. Hood, engineer, 40, Queen's-rd., Clifton, Bristol. Dep. £2 2s.

Dewsbury.—Alterations.—At baths, Wellington-rd., for C.B. H. Dearden, A.R.I.B.A., B.S.

Enfield.—Public Convenience.—In Church-st., Enfield, for the U.D.C. Council's Surveyor, Public Offices, Enfield. Dep. £2 2s.

Epsom.—Painting.—External and internal distempering, etc., to cottages at Woodmansterne, Headley, Burgh Heath and Ewell, for R.D.C. W. T. Wooldridge, S.

Glasgow.—Railings.—For (1) iron railings and (2) painter work, at Parkhead housing scheme, for T.C. D. Stenhouse, T.C.

Gloucester.—New Kitchen.—At the Wotton Mental Hospital, for the Committee of Visitors of the Gloucester County and City Mental Hospitals. Charles Martin, Clerk of Works at the Hospital. Dep. £2 2s.

Prestwich.—Fencing.—500 yds. of deal paling fence and approximately 100 yds. of lattice and close board screen fencing, for U.D.C. S.

Prestwich.—Floors.—Repairs and relaying of floors on Council's housing estates, for U.D.C. S.

St. Albans.—Cottage.—At Sandridge-rd. depot, for T.C. P. T. Negus, City E. and S., 38, St. Peter's-st.

Sheffield.—Building.—Two new ward blocks, etc., at Lodge Moor hospital, for T.C. W. Geo. Davies, F.R.I.B.A., City Architect. Dep. £2.

Southport.—Library.—Branch library in Liverpool-av., Ainsdale, for C.B. A. E. Jackson, B.E. Dep. £1 1s.

Willesden.—Hospital Buildings.—New observation ward block and a new nurses' quarters block and incidental works at Dog-lane. F. Wilkinson, M.Inst.C.E., Town Hall, Dyne-rd., Kilburn, N.W.6. Dep. £2 2s.

Winchester.—Painting.—Summer repairs at several elementary schools, for E.C. City S.

APRIL 24.

Aberdeen.—Improvements.—Mason, carpenter and plumber works of covered court, Mains of Towie, Auchterless Station, for Endowments Trust. W. L. Duncan, architect, Turriff.

Hatton.—Alterations.—Dwelling house, Lower Smiddyseat, Turriff, for Hatton estate. W. L. Duncan, architect, Turriff.

Keighley.—Builders' Work.—In connection with new stokery and greenhouse in Devonshire-park, for Parks Committee. J. Bailey, Parks Superintendent.

Manchester.—Extensions.—To City Exhibition hall, Byrom-st., for T.C. City Architect. Dep. £1 1s.

Newton Abbot.—Houses.—4, at Abbotskerswell, for R.D.C. B. H. Palmer, L.R.I.B.A., 11, Union-st.

***Southwark.**—Cleaning and Painting Works internal. Maple Flooring and Asbestos Sheet Ceilings.—In wards at Hospital, East Dulwich-grove, S.E., for the Guardians, Southwark Union. A. Saxon Snell & Phillips, 9, Bentinck-street, Manchester-square, W.1. Dep. £5.

Steeton.—Electric Light.—Installation at Steeton Council School, for West Riding C.C. B. Thornton, Divisonal Clerk, Education Office, Skipton.

Tavistock.—Houses.—16 at Witham-park, for U.D.C. S.

West Ham.—Extension.—To the Fire Brigade Station, North Woolwich-rd., Silvertown, for the West Ham C.B. B.E., Town Hall, West Ham, E. Dep. £1.

APRIL 25.

Chesterfield.—Home.—Extension to Nurses' Home at Chesterfield Union Workhouse, for B.G. W. A. Derbyshire, architect, 30, Gluman-gate. Dep. £1.

Dublin.—Building.—Building works and supplies, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works. Dep. £1.

Dublin.—Paths.—Clearing work, re-making paths in grounds and other works in building at Custom House, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1

Eaglesham.—Steadings.—Twelve steadings on North Kirklands farm, for Board of Agriculture for Scotland. Chief Surveyor, York Buildings, Queen-st., Edinburgh. Dep. £1.

Hull.—Building.—Reinforced concrete pump chamber at East District Pumping Station, for T.C. T. Thomas, City E.

Hyde.—Stonework.—In connection with new entrance gates to the park, for Corporation. B.S.

Inverask.—Installation.—Of electric light in Combination Poorhouse. J. B. Anderson Begg, consulting engineer, 8, Hope-st., Edinburgh. Dep. £1 1s.

Llanelly.—Repairs.—To houses known as Nos. 1 and 5, Ropewalk-rd., for T.C. B.S.

Poplar.—Exterior Painting.—Of St. Andrew's Hospital, Bromley-by-Bow, E.3, for the Poplar Guardians. Harley Heckford, B.E. and S., Council Offices, High-st., E. Dep. £2 2s. to the Clerk.

APRIL 26.

Bexhill.—Pavilion, Grand Stand and Lavatories.—In the Polegrove, Bexhill, for the B.C. Geo. Ball, B.S. Dep. £1 1s.

Down.—Building.—For (1) Killinchy P.E. school, Killinchy, Co. Down, building alterations and additions, steel casements, steel works; and (2) Windsor Hill P.E. school, Newry, Co. Down, wood block flooring, terrazzo flooring, wall tiling, for County E.C. Castor J. Love, architect and civil engineer, 11, Chichester-st., Belfast. Dep. £2 2s.

Dunfermline.—Installation.—Electrical installation in new laundry block to be erected in connection with extension of hospital, for Dunfermline and West Fife Hospital Committee. Muirhead and Rutherford, architects, East Port. Dep. £1 1s.

Feltham.—Houses.—56 houses and road at Harlington-rd., for U.D.C. J. H. Sandy, clerk. Dep. £2 2s.

Glasgow.—Trades.—In connection with Burgher-st. re housing scheme, for T.C. D. Stenhouse, T.C.

Holywell Green.—Alterations.—To store, for Stainland and Holywell Green Industrial Society, Ltd. J. Berry & Sons, architects and surveyors, 1, Market-walk, Huddersfield.

Kensington.—Building Work.—Receiving room to the west end of the maternity wards at St. Mary Abbots Hospital, Marloes-rd., for the Guardians. F. W. Turner, Clerk, Guardians Offices, Marloes-rd.

Lincoln.—Garage.—Central bus garage and workshops in St. Mark's-st., for T.C. City E. and S. Dep. £2

London.—Telephone Exchange.—"Terminus," King's Cross, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Southwick.—Flats.—16 self-contained flats and 8 cottages in St. Aubyn's-rd., Fishersgate, for U.D.C. G. W. Warr, S. Dep. £1 1s.

Stirling.—Building.—New police station at Spittal-st., for T.C. A. H. Goudie, B.E. Dep. £1.

Sutton-in-Ashfield.—Houses.—56 non-parlour type, on Kirby-rd. site, for U.D.C. Warner, Bocock & Dean, architects and surveyors, Mansfield-rd. Dep. £3 3s.

Tourmakeady.—College.—Preparatory training college at Tourmakeady, Co. Mayo, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1.

Winchester.—Extensions.—Also alterations to electricity offices in Gordon-rd., for T.C. Cancellor and Sawyer, F. and A.R.I.B.A., Queen Anne-chambers. Dep. £2 2s.

APRIL 27.

Bristol.—Houses.—58, on Sea Mills housing site, for T.C. L. S. McKenzie, City E. and S., 51, Prince-st. Dep. £1.

Dundonald.—Steadings.—9 steadings on Ploughland Farm, Dundonald, by Kilmarnock, for Board of Agriculture for Scotland. Chief Surveyor. Dep. £1 1s.

Ireland.—Building.—For (1) station at Santry, Co. Dublin; (2) reconstruction of building at Convoy, Co. Donegal; (3) reconstruction of building at Farranfore, Co. Kerry; (4) alterations to Killarney Garda Siochana Station, Co. Kerry, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1 each.

Mexborough.—Additions.—Also alterations to Secondary school, for West Riding E.C. Education Department, County Hall, Wakefield.

New Mills.—Houses.—Fifty non-parlour type, on Council's housing site, Bakehurst Estate, for U.D.C. W. C. Sheard, E. and S. Dep. £2 2s.

***Orsett.**—Houses.—Erection of 122, in various parishes, for the Orsett R.D.C. E. and S., Council Offices, Palmers-av., Grays.

APRIL 28.

Buxton.—Additions.—Also alterations to Bedford private hotel, St. John's-rd. Chas. Flint, L.R.I.B.A., architect and surveyor.

Ramsey (Isle of Man).—Dwellings.—7, for Town Commissioners. G. Kay & Sons, architects, 22, Athol-st., Douglas.

***West Ham.**—Repairing and Painting.—Of exteriors of various schools, for the C.B. John H. Jacques, L.R.I.B.A., 61, West Ham-lane, Stratford, E.15. Dep. £1.

APRIL 30.

Cardiff.—Alterations.—At hospital of City Lodge Institution, for B.G. Willmott & Smith, architects, 4, Park-pl. Dep. £2 2s.

East Preston.—Cottages.—4 at Clapham and 6 at Ferring, for R.D.C. H. R. Judd, S., 72, South-ter., Littlehampton.

***Southend-on-Sea.**—Pavilion.—Erection of, between the bowling greens on the Chalkwell-esplanade, for the C.B. Robt. H. Dyer, B.E., Municipal-buildings. Dep. £2.

***Southend-on-Sea.**—Windows.—Additional windows on the tipping floor at the refuse destructor, for the B.C. Robt. H. Dyer, B.E., Municipal-buildings. Dep. £2.

***Stepney.**—Constructional Steelwork and Reinforced Concrete Work.—Required in proposed bath-rooms, external stairs and sun balconies, for the Guardians. S. McClelland, Clerk, Administrative Offices, Bancroft-rd., Mile End, E.1. Dep. £1 1s.

Tilbury.—Houses.—315, including reinforced concrete slab foundations, triangular block system or in brickwork, for the U.D.C. S. A. Hill-Willis, E. and S., Council Offices, Civic-square. Dep. £5.

MAY 1.

Blunts (Cornwall).—Renovation.—Of Wesleyan Chapel, for Trustees. Mr. Martin, "Bearah," near Blunts, Tideford, St. Germans.

Chingford.—Houses.—20, in pairs, for the U.D.C. G. H. Green, Clerk, Council Offices, Station-rd., Chingford, E.4. Dep. £2 2s.

Dublin.—Wiring.—For electric lighting and heating of 100 houses in Drumcondra housing scheme, for Corporation. Gerald J. Sherlock, T.C.

Dolgelley.—Additions.—Also extensive improvements in connection with chapel, for Baptist Chapel Committee. J. E. Griffiths, L.R.I.B.A., Owen Morris Roberts & Son, architects and surveyors, Portmadoc.

***Hornsey.**—Reconstruction.—Of the superstructure and widening of bridge No. 2, carrying road over railway at Muswell-hill, for the T.C. C. J. Brown, engineer, King's Cross Station, N.1.

Irishtown.—Rectory.—For St. Matthew's Church. Rev. J. S. Carolin, 56, Tritonville-rd., Sandymount. Dep. £2.

Mold.—Painting.—Also decorating at following schools, for Flintshire E.C. R. G. Whitley, C.A. (2) Leeswood N.P., (3) Llanfynydd Council, (4) Northop Hall Council, (5) Soughton Council, (6) Custom House Lane Council (infants'), (7) Mold Junction Council, (8) Pentrobin C.E. R. G. Whitley, C.A. and S.

Teignmouth.—Houses.—28, on the Mill-lane site, for the U.D.C. F. W. Knight, Dist. S.

MAY 2.

Manchester.—School.—Open-air municipal school, Crumpsall, for E.C. P. M. Heath, T.C.

Rochester.—Houses.—6 non-parlour, on Maidstone-rd. housing site, for T.C. W. Law, City S. Dep. £1 1s.

MAY 3.

Edinburgh.—Adaptations.—Also alterations at 118, George-st., as extension of central telephone exchange, for H.M.O.W. Architect, H.M. Office of Works, 122, George-st., Edinburgh. Dep. £1 1s.

Southampton.—School.—New Council school at Wherwell, for the C.C. of Southampton. A. L. Roberts, C.A., The Castle, Winchester. Dep. £1 1s. by cheque payable to the "Hants County Council" and crossed "Lloyds Bank, Ltd., Winchester."

Southampton.—School.—New Council school at Totton, for the C.C. of Southampton. A. L. Roberts, C.A., The Castle, Winchester. Dep. £1 1s. by cheque payable to the "Hants County Council" and crossed "Lloyds Bank, Ltd., Winchester."

Southampton.—School.—At Cranfield, for Southampton C.C. A. L. Roberts, County Architect, The Castle, Winchester. Dep. £1 1s. by cheque, payable to "Hants County Council" and crossed "Lloyds Bank, Ltd., Winchester."

MAY 5.

Glasgow.—Jobbing Work.—For Parks Dept. D. Stenhouse, T.C.

Staines.—Heating.—Of infirmary at Staines Poor Law Institution, London-rd., Ashford, for B.G. J. Roger Preston, consulting engineer, 7, Southampton-st., Bloomsbury-sq., W.C.1. Dep. £1 1s.

MAY 7.

***Croyden.**—Houses.—Erecting of 64 (70 lettings) at Hermitage-rd. estate, Upper Norwood, for the C.B. B.E., Town Hall. Dep. £3 3s.

***Croydon.**—Houses.—Erection of 90 (98 lettings) at Mitcham-rd. estate, for the C.B. B.E., Town Hall. Dep. £3 3s.

Leeds.—Foundations.—Excavation for and construction of ferro-concrete raft, foundations and ducts in connection with Kirkstall power station at Redcote Farm, Armley, for T.C. C. N. Hefford, manager, Electricity Dept., 1, Whitehall-rd. Dep. £1.

Lewisham.—Internal painting of the Lewisham Hospital, High-st., Lewisham, S.E.13, for the Lewisham Guardians. Guardians' Offices, 394, High-st. Dep. £3 3s.

Norwich.—Repairs and Materials.—For War Dept. Director of Army Contracts, Imperial House, Tothill-st., Westminster, S.W.1.

MAY 8.

Ben Rhydding.—Additions.—Also alterations required at Ben Rhydding Council School, for West Riding E.C. Education Department, County Hall, Wakefield.

Girvan.—Alterations.—Also adaptations at post office, for H.M.O.W. Architect, H.M. Office of Works, 122, George-st., Edinburgh. Dep. £1 1s.

London.—Public Baths and Wash-houses.—In Weston-st., Bromley-by-Bow, E., for the Poplar B.C. Harley Heckford, B.S. Dep. £3 3s.

***Nottingham.**—Telephone Exchange.—At Beeston, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Swallownest.—Painting.—Internal and decorating South Rotherham and Kiveton-park District Isolation Hospital, for committee. A. H. Styring, Clerk, 6, North Church-st., Sheffield.

West Riding.—Installation.—Providing and fixing a low pressure hot water installation at Hirst Courtney and Temple Hirst New School, for County E.C. Education Department, County Hall, Wakefield.

MAY 9.

***Northumberland.**—Post Office.—At Wallsend, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

MAY 10.

***Birmingham.**—Telephone Exchange.—At Harborne, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

MAY 11.

***St. Pancras.**—Builders' Work.—Extensions to Highgate Electricity Sub-Station, for the B.C. Electricity Offices, 57, Pratt-street, N.W.1. Dep. £1.

MAY 14.

St. Pancras. — Superstructure. — For block of dwellings at Ossulston-st., for the L.C.C. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Dep. £2.

NO DATE.

Batley.—Fencing.—Erection and repair of about 150 yds. wooden fencing on land off Dark-lane, Knowles, 28, Morris-lane, Kirkstall.

***Burton-on-Trent.**—New Premises.—At Burton-on-Trent. Architect's Department, Co-operative Wholesale Society, Ltd., Balloon-st., Manchester. Dep. £1 1s.

Dundee.—Depot.—Cleansing depot, Fairfield-rd., for T.C. G. Baxter, 91, Commercial-st.

Hanley.—Cottages.—2 for disabled ex-Service men in Cauldon-rd. A. Lloyd Thomas & Douglas Wood, architects, 35, Craven-st., Strand, W.C.2.

High Wycombe.—Hall.—Village hall at Naphill, near High Wycombe. Taylor & White, A.R.I.B.A., architects, 7, Bourbon-st., Aylesbury. Dep. £1 1s.

Holbeach.—Residence.—On Cemetery-rd., for W. Curtis. F. B. Ward, L.R.I.B.A., architect, 8, South Brink, Wisbech.

Thirsk.—Repairs to Thirkleby church roof, excluding spire. J. Armstrong, Thirkleby, Thirsk.

MATERIALS, ETC.

APRIL 23.

Canvey Island.—Highway Materials.—For U.D.C. A. G. J. Cornner, E. and S.

Cromer.—Highway Materials.—For U.D.C. R. Croome, S.

APRIL 24.

Barnoldswick.—Road Materials.—For U.D.C. W. Ellis, S.

King's Lynn.—Tarred Slag.—For T.C. J. C. Matthew, B.E.

APRIL 26.

Belfast.—Builders' Materials.—For Gas Dept. Engineer and Manager, Gas Works.

APRIL 27.

Barnsley.—Pipes.—4,100 yds. of lined steel pipe 20 in. (nominal) diameter, together with necessary special pipes, for C.B. J. R. Fox, Waterworks Engineer and Manager, Doncaster-rd. Dep. £3 3s.

Bolton-upon-Dearne.—Road Materials. For U.D.C. W. H. Adams, S.

APRIL 30.

Shoreham-by-Sea.—Granite.—For U.D.C. Town Surveyor.

MAY 1.

Cairo.—Asphalt.—For Egyptian Ministry of Public Works. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (B.X. 4263).

Glasgow.—Builders' Materials.—For Tramways Dept. D. Stenhouse, T.C.

MAY 2.

Huyton-with-Roby.—Macadam.—For (a) 500 tons 2½-in. graded tarred slag macadam, (b) 100 tons 1½-in. tarred limestone macadam, and (c) 50 tons ¾-in to ⅝-in. tarred limestone, and also 300 tons ⅜-in clean granite chippings, for U.D.C. H. Finister, S.

MAY 30.

Ceylon.—Extensions.—Cast iron pipes for Galle Corporation. Consulting Engineer, Galle Waterworks, c/o Glenfield and Kennedy, Ltd., 39, Victoria-st., S.W.1.

ENGINEERING, IRON AND STEEL.

APRIL 24.

East Hagbourne.—Laying-out.—New cemetery, including erection of about 640 yds. of fencing of various kinds, a small cloakroom, tool shed, etc., the construction of a culvert, water service, etc., for P.C. T. G. Faulkner, architect, Harwell-rd., Didcot. Dep. £1 1s.

Lochaber.—Steelwork.—Structural steelwork for power house and factory buildings, for North British Aluminium Co. Secretary, Adelaide House, King William-st., London.

London.—Engineering Labour.—In Newcastle-on-Tyne, Leeds, and Southampton, for H.M.O.W. Contracts Branch, H.M. Office of Works, King Charles-st., S.W.1.

APRIL 25.

London. — Steelwork. — Structural steel work, galvanised work, etc., for engine erecting shop, for Assam-Bengal Rly. Co. Hodges, Bennett & Co., Ltd., 78, Queen Victoria-st., E.C.4.

MAY 1.

India.—Bridges.—35 road bridges for Lloyd Barrage, for India Store Dept. Director, Belvedere-rd., S.E.1.

London.—Steelwork.—175 tons structural steelwork for Madras and Southern Mahratta Railway Co., Ltd. Director.

MAY 4.

London.—Bridgework.—690 tons, for Indian Store Dept., Director-General, Belvedere-rd., S.E.1.

Wortley.—Tank.—Reinforced concrete tank at Stannington, for R.D.C. F. Thurlby, E. Dep. £1.

MAY 7.

Portadown.—Steelwork.—For fabrication, delivery and erection of steel framework in connection with reconstruction of Shambles, William-st., for U.D.C. R. Ferguson and S. McIlveen, architects, 36, Scottish Provident-buildings, Belfast.

MAY 10.

Johannesburg.—Bridge Work.—Structural bridge work for Smith-st. Bridge, Durban; Potgieter-st. Bridge, Pretoria, additional set of stairs, Witbank footbridge, for South African Railways and Harbours. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Reference A.X. 6145.)

Lochaber.—Reconstruction of bridge over the River Lochy. Sir E. Owen Williams, K.B.E., 5, St. George's-rd., Westminster, S.W.1. Dep. £5 5s.

MAY 11.

***Belfast.**—Steelwork.—Delivery and erection of steelwork at the Law Courts, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

MAY 14.

Carlisle.—Footbridge.—Steel plate girder footbridge, approximately 189 ft. long and 7 ft. wide, over L.M. and S. Rly. near Maryport Cottages, for T.C. Percy Dalton, A.R.I.B.A., City E.

Glasgow.—Bridge.—Over L. and N.E. Rly. (Glasgow and Airdrie Line) at Barrachnie, for T.C. D. A. Donald, engineer, 271, Alexandra-parade. Dep. £3 3s.

JUNE 5.

Alexandria (Egypt).—Bridge.—Metallic swing bridge over Mahmudia Canal, for H.M. Consul-General. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Ref. A.X.6030.)

ROAD, SEWERAGE, AND WATER WORKS.

APRIL 23.

Aberdeen.—Mains.—Extension of water and sewer mains in new road, off Dalhebity-rd. at Bieldside, for D.C. of C.C. A. Clark, District Clerk, 7, Bon-Accord-sq.

Beddington and Wallington.—Improvements.—To Lavington-rd. (between Croydon-rd. and northern boundary of 31, Lavington-rd.), for U.D.C. S. F. R. Carter, E. and S. Dep. £1 1s.

Dumfries.—Water Supply.—Supplying and laying of 580 lin. yds. of 2-in. diameter cast-iron pipes to replace the existing 2-in. and 1½-in. branch mains, together with all special castings, valves, and other fittings; the transfer of the existing house connections to the new mains and all incidental works, for Thornhill, for C.C. W. C. Easton, Chartered Civil Engineer, 183, West George-st., Glasgow, C.2. Dep. £1 1s.

Ealing.—Road.—Construction of new road from Pope's-lane to Almond-av., for T.C. W. R. Hicks, B.E.

Hornsea.—Tarring.—Surface tarring about 90,000 super. yds. of various streets and roads, for U.D.C. H. W. Boardman, E. and S. Dep. £1 1s.

Liverpool.—Pipe-laying.—Laying of steel pipes of 42-in. internal diameter and other ancillary works, as follows:—From Ashton's Cross to Beeston Moss, in County of Chester, for distance of about 5¾ miles, for Corporation. Water Engineer. Dep. £5 5s.

London.—Paving.—Reinforced concrete carriageway, and with artificial flags and gravel with granite kerb, the footways of Ashworth-rd., between Elgin-av. and a line drawn across Ashworth-rd. from party fence of 7 and 9, Ashworth-rd. to north fence of garage of 24, Ashworth-rd., for Paddington B.C. B.E. and S. Dep. £1 1s.

London.—Surface Water Sewer.—In Lionel-rd., Brentford, for the Brentford and Chiswick U.D.C. Edward Willis, B.S., Town Hall, Chiswick, W.4.

Manchester.—Sewering.—Sewering, draining, paving (concrete), flagging (artificial flags), etc., Whiteway-st., Moston, from Vernon-st. to a point 107 2-3 yds. distant in a south-easterly direction, and draining, paving (concrete), etc., passage behind 2-12, Towton-st., 1-4, Devonport-terr., Hall-st., 3-11, Willow Bank, Church-lane, etc., Moston, passage behind 9-21, Farndon-av., etc., Harpurhey, passage behind 57-69, Corwen-av., etc., Harpurhey, for T.C. P. M. Heath, Town Clerk. Dep. £1 1s.

Shoeburyness.—Drainage.—In connection with 8 houses in Grove-rd. and 1 house in Cambridge-rd., for U.D.C. J. W. Stevens, S. Dep. £1 1s.

APRIL 24.

Argyll.—Resurfacing.—With tar-grouted macadam about 3 miles of roadway throughout district; also about 1 mile of roadway with waterbound macadam surface sprayed with tar, for Mid-Argyll Committee of C.C. C. C. MacArthur, S., Lochgilphead.

Dublin.—Widening.—Of roadway at Stillorgan, for C.C. C.S., 11, Parnell-sq. Dep. £5.

Great Crosby.—Making-up.—Portions of Brownmoor-lane and Forefield-lane, for U.D.C. A. Wright, S.

West Suffolk.—Making-up.—Also laying of approximately 5,490 yds. lin. of reinforced concrete kerbing and concrete haunching near Shippea Hill Station on the Mildenhall-Littleport main road, for C.C. E. H. Bond, C.S.

Willesden.—Paving.—Asphalt paving North Circular-rd. (section 3) from Edgware-rd. to Neasden-lane, for U.D.C. F. Wilkinson, E.

Winchester.—Pipes.—Taking up existing 15-in. stoneware pipes and relaying with 15-in. cast-iron pipes, with turned and bored joints, for T.C. City E.

APRIL 25.

Birmingham.—Paving.—Supplying, laying and maintaining hand-laid granited rock, asphalt paving, 2-in. in thickness, as follows:—(1) in Lichfield-rd., between Aston-cross and Victoria-rd., approximate area of 4,288 sq. yds., and (2) in Balden-rd., Harborne, area of 9,800 sq. yds., for T.C. H. H. Humphries, City E. and S. Dep. £1 each.

Chipping Sodbury.—Sewerage.—For R.D.C. W. H. Williams, Sanitary S.

Edinburgh.—Paving.—500 tons of fine-dressed British granite setts, for Princes-st. paving scheme, for T.C. City Road Surveyor.

London.—Making-up.—Carriageways and footpaths in (1) Sawley-rd. (part), (2) Galloway-rd. (part), for Hammersmith B.C. R. Hampton Clucas, B.E. and S.

Luton.—Making-up.—Of Hillborough-rd. (part), Corncastle-rd., for T.C. J. W. Tomlinson, B.E. and S.

Merton and Morden.—Sewer.—Soil sewer in Kenley-rd. (east end) for length of approximately 244 yds., for U.D.C. E. and S. Dep. £1 1s.

Salisbury.—Making-up.—Bouverie-av., for Corporation. W. J. Goodwin, City E. and S. Dep. £1 1s.

APRIL 26.

Bexhill.—Making-up.—Of Approach roads to Manor-rd. bridge, of approximate total length of 113 yds., for T.C. Geo. Ball, B.S. Dep. £1 1s.

Cork.—Mains.—Cleaning by the scraping process of about 1,000 yds. of 3-in., 5,000 yds. of 4-in. and 1,000 yds. of 6-in. water mains, for Commissioners. Town Clerk, Fitzgerald-park, Cork.

Ealing.—Improvements.—Of Oldfield-lane (from Western-av. to Coston's House), for T.C. W. R. Hicks, B.E.

Ramsgate.—Making-up.—Of Norman-rd., for Corporation. T. G. Taylor, B.E.

Renfrew.—Road.—Widening of Eastwood main road from Spiers Bridge to Eastwood Toll, a distance of about 1,600 lin. yds., for C.C. Kyle & Frew, engineers, 227, West George-st, Glasgow, C.2. Dep. £2.

APRIL 27.

Plympton St. Mary.—Main.—Providing and laying 497 yds. of 6 in. diameter water main and appurtenant works at Plympton, for R.D.C. E. Dep. £1 1s.

APRIL 28.

Cheshire.—Widening.—Also reconstruction of 2 sections of Chester-Birkenhead main road, for C.C. C.S., The Castle, Chester. Dep. £2 2s.

Harrogate.—Street Works.—In Stonefall-av. from Southern Bounday of No. 102, Stonefall-av. to Woodlands-drive, for Corporation. C. B. Rivers, B.E. and S.

Hyde. — Surfacing. — 2-in. single-coat asphalte macadam surfacing, in several streets, for Corporation. B.S.

APRIL 30.

Ealing.—Making-up.—Various roads on Pope's-lane housing estate, for T.C. W. R. Hicks, B.E.

East Preston.—Tarring.—Surface tarring of approximately 120,000 sq. yds. of roads, for R.D.C. S.

Hove.—Macadam.—Providing and laying with tarred macadam three portions of playgrounds at Portland-rd. schools for E.C. B.S.

MAY 1.

Cardiff.—Tarmacadam.—For R.D.C. W. Farrow, E. and S. Dep. £2 2s.

Carshalton.—Drainage.—Surface water drainage in Beddington-gardens, comprising 12-in. and 15-in. sewers, manholes, etc., for U.D.C. R. A. Hutson, acting surveyor. Dep. £2.

Carshalton.—Making-up.—Of (1) Downside-rd. and (2) Beddington-gardens, for U.D.C. R. A. Hutson, acting surveyor. Dep. £2.

ESTIMATING ON RIGHT LINES

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Margate.—Road.—Constructing, sewering and making-up continuation of Northdown-rd., east of Ye Olde Charles Inn; new road to be known as Foreland-av., leading from continuation of Northdown-rd. to Holly-lane. Portion of Dane Valley-rd., from easterly side of "Corona" to westerly boundary of Coporation's housing land, for T.C. B.S.

MAY 2.

Huyton-with-Roby.—Tar-spraying.—Approximately 37,000 sup. yds. of highways, for U.D.C. H. Finister, S.

Stanley.—Repairs—To playgrounds and pointing of premises at Grove Council School, for West Riding E.C. Percy Beaumont, W.R. Education Offices, 8, St. John's North, Wakefield.

Sunderland.—Roads.—Also sewers and watercourse at Ford housing estate, for C.B. B.E. Dep. £2 2s.

MAY 4.

Ballymena.—Resurfacing.—Of portions of Galgorm-rd., 6,700 sq. yds., and Summerhill and Cushendall-rd., 8,500 sq. yds., for U.D.C. H. O'Hara, T.C. Dep. £1.

Auction Sales, Tenders, etc.

APRIL 24.

London.—Hampton & Sons, at St. James' Estate Rooms, 20, St. James'-sq., S.W.1. Freehold building estate at Potters Bar, Middlesex. Auctioneers, 20, St. James'-sq., S.W.1.

APRIL 25.

***London.**—E. Fryett, at the London Trade Sale Rooms, Ltd., 78 and 81, Fetter-lane, E.C. 15,000 pieces of wallpaper. Auctioneers, as above.

APRIL 26.

***London.**—Veryard & Yates, without reserve. Owner retiring. Eaton-grove, Holloway-rd., N. Building plant and material. Auctioneers, 395, Norwood-rd., S.E.27.

***London.**—William Willett, by order of the liquidator re Messrs. Arthur Vigor, Ltd., in voluntary liquidation, upon the premises, 72 Harrow-rd., W.2, and Porteous-yard, Porteous-rd. Builders' and contractors' plant and material. Auctioneers, The Willett Building, Sloane-sq., S.W.1.

***Stratford.**—W. & S. Freeman (Aldridges, Ltd.) by Order of Messrs. Pye, Oswell & Co., without reserve, at George House, Vicarage-lane, Stratford, E.15. Char-a-bancs, lorries, sentinel wagons, etc. Auctioneers: 6, Upper St. Martin's-lane, W.C.2.

MAY.

Hastings.—Berryman & Gilkes. By order of the court. Residential estate, 4 bungalows, 6 cottages, etc., to be sold by auction or privately. Auctioneers, 2, Hans-rd., S.W.3.

MAY 1.

Surrey.—King & Chasemore, at The Red Lion Hotel, Dorking (unless sold previously by private treaty). Leasehold business property known as The Mid-Surrey Lime Works, machinery, plant and equipment. Auctioneers, Richmond House, Horsham.

MAY 2.

***Ewell.**—Charles R. Davis & Co. Unreserved sale, by order of the owner, on the premises by kind permission, Epsom-rd., Ewell (at Mr. Garner's yard). New and s.h. Building materials. Auctioneers, 285, Borough High-st., S.E.1.

MAY 10.

Uxbridge.—Constable & Maude will sell, by direction of George Rose, Esq., in 28 lots, at the Chequers Hotel, Uxbridge (unless previously sold privately), portions of the Harefield-place estate, Middlesex, also mansion, in all about 700 acres. Auctioneers, 2, Mount-st., Grosvenor-sq., W.1.

Public Appointments.

APRIL 27.

***Leicester.**—Assistant Quantity Surveyor required by the City Council. J. S. Fyfe, A.R.I.B.A., Housing Architect, Wyggeston House, 18, Highcross-st.

APRIL 30.

London.—Temporary Architectural Assistant in dept. of the Chief Engineer of the Metro. Water Board. Henry E. Stilgoe, M.Inst.C.E. Offices of the Board, 173, Rosebery-av., E.C.1.

***Plymouth.**—Two Building Inspectors in B.E. and S. Dept. required by the C.B. J. Wibberley, B.E., S. and A., Municipal-buildings.

MAY 7.

***Brighton.**—Engineering and Surveying Assistants, Assistant Building Inspectors and Town Planning Assistants required by the C.B. David Edwards, B.E. and S., Town Hall.

MAY 8.

***Southall-Norwood.**—Assistant Building Inspector required by the U.D.C. J. B. Thomson, B.E. and S. Stamped addressed foolscap envelope.

MAY 12.

London.—Head of the Architectural, Bdg. and Sur. Dept., whole time or part time. W. M. Macbeth, Clerk to the Governors, Northern Polytechnic, Holloway, N.7.

NO DATE.

Aylesbury.—Clerk of Works required immediately for extensions at the High Wycombe Technical Institute. C. H. Riley, C.A., Edu. Sub Office, Aylesbury.

PATENTS

APPLICATIONS PUBLISHED.*

280,299.—W. P. Roberts and Ruston & Hornsby, Ltd.: Excavating machines.

280,309.—J. E. Sanders and F. Anderson: Pointing of brickwork.

280,326.—H. Schafer: Underground machine chambers, repair rooms, or the like in mine or tunnel works.

263,757.—K. H. Wolman, Dr. F. Peters, and Dr. H. Pflug: Preservation of wood.

280,398.—S. Gosling: Decorators' mouldings.

280,400.—H. F. Webb: Floors.

280,417.—H. Schaefer: Lining-constructions for galleries, tunnels.

280,423.—C. A. Lewis: Window.

274,813.—T. Popescu, A. Pais and C. Pais: Heating-apparatus.

280,456.—J. S. Hancock and W. H. Macmenigall: Method and means for preparing a wet mixture of fibre and cementitious material.

280,644.—J. Spencer, Ltd., and Sir T. H. Spencer: Pipe joints.

280,702.—H. Schafer: Linings for mines, galleries, tunnels and the like.

280,738.—K. S. Jassawalla: Ventilator.

268,750.—H. Junkers: Material for use in building walls, roofs and the like.

280,784.—J. Bruning & Sohn Akt.-Ges.: Wall coverings.

280,785.—J. Bruning & Sohn Akt.-Ges.: Wall coverings.

280,813.—H. E. Doughty: Process or method of producing coloured cement or cement mixtures.

280,823.—W. E. Ranford: Concrete and like buildings.

280,832.—Leabank Manufacturing Co., Ltd., and F. W Kent: Walls and roofs of portable buildings.

281,345.—H. Robert: Cowl to prevent downdraughts in ventilating shafts and pipes.

280,980.—G. H. Dunlop: Excavating machine.

280,987.—J. J. Rawlings and Rawlplug Co., Ltd.: Metallic wall-plugs.

281,022.—E. Doggett: Waterproofing materials and concrete articles treated therewith.

281,025.—J. L. West: Moulding of concrete roofing-tiles.

281,086.—G. Adams: Device for use in securing overmantels, mirrors and other articles to walls and other structures.

275,157.—C. Herzog: Method of manufacturing pipes from asbestos cement or similar materials.

269,914.—Soc. Baude Frères et Cie.: Assembly parts for structural ironwork.

281,170.—W. S. J. Bailey: Folding brackets or hinges for shelves, flaps.

261,190.—F. Poitzi: Pillars, columns.

275,992.—C. Werkenthin: Wooden door.

281,853.—R. E Nicholson, D. T. Bardsley, and G. Copeland: Device for supplying disinfectant to cisterns of water closets and urinals.

281,901.—Fawcett, Ltd., D. L. Fawcett and A. E. Bottomley: Brick-pressing machines.

261,920.—M. H. Aten: Flushing-apparatus.

270,336.—Mullioz Frères et Cie.: Process for the production of imitation marble veins in building materials.

272,465.—J. W. Page: Excavating-devices.

281,941.—R. A. Whitson: Moulding of plastic cementitious materials, such as in the manufacture of concrete pipes.

281,954.—F. R. Lindley and L. H. M. Engineering Co., Ltd.: Ceiling Lights.

281,757.—W. A. Oakley: Manufacture of artificial stone and plaster.

281,766.—Machee, Ltd., and F. Begley: Advertising plates, signs and indicators.

278,646.—J. Bruning & Sohn Akt.-Ges.: Method of manufacturing boxes.

281,847.—S. P. Shipway: Castors.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

PROPOSED NEW BUILDINGS AND OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A

Accrington.—Plans passed:—houses in Poulton-av., for J. W. Hodgson, and houses in Manchester-rd., for Edmundson & Slater.

Athy.—Kildare County Board of Health authorised to borrow £3,000 for purpose of effecting sanitary improvements at County Home.

Audenshaw.—Plans been submitted to Council for greyhound racing track on grounds comprising Audenshaw trotting track. Architect, P. Cummings, A.R.I.B.A., 51, King-st., Manchester.

Barking Town.—U.D.C. passed plans:—4 garages in Hertford-rd., for Mrs. E. Baker; 8 houses in Howard-rd., for J. Graffy; alterations and additions to 109, East-st., for Lloyds Bank, Ltd.; 6 houses in Shirley-gardens, for J. R. Leftley.

Blackpool.—Montague Burton, Ltd., of Leeds, acquired site at Church-st. for new branch. Plans by H. Wilson, architect, 81, North-lane, Roundhay, Leeds.

Bradfield.—West Riding C.C. preparing plans for elementary school to accommodate 350 children.

Bradford.—Arrangements made for suitable apportionment of Whetley-lane site for erection of new dwellings.

Bramhall.—Members of Bramhall Congregational Church are proposing to erect church hall. Plans by J. H. Price, A.R.I.B.A., Brunholt, Bramhall-lane. Building is to accommodate about 200 persons.

Bromley.—T.C. passed plans:—10 houses, Nightingale-lane, Easter & Webb; 10 houses, South-view, G. F. Coldman; 7 houses, Gladwell-rd., D. Deadman; 6 houses, Rochester-av., H. A. Pierpoint; Baptist chapel, Hayes-lane, Smee & Houchin; alterations to Rising Sun, High-st., F. G. Crickett.

Burnley.—T.C. passed plans:—convenience, Westgate Chapel schools, submitted by Trustees; 12 houses, Barden-lane, submitted by J. S. Stansworth. —Bridge in Church-st. is to be widened on side adjoining Parish Churchyard.

Canterbury.—Demolition of Hales Place, near Canterbury, large mansion until recently used as a Jesuit college, has been begun.

Carlisle.—Home Office accepted offer of Corporation, amounting to £25,000, for Carlisle Arms State management inn, the demolition of which is required for a street improvement scheme costing £80,000.

Chesterfield.—An architect has not yet been definitely engaged to prepare plans for Catholic Church on Chesterfield-rd., Staveley, for Father Sweeney.

Chorley.—Father W. Formby, of Sacred Heart R.C. Church, Brooke-st., secured site on Bolton-rd., where he proposes to erect central school having accommodation for 500 children. Plans by J. O. Harris, architect, 4, Camden-place, Preston.

Coalville.—Rev. J. Degan, of St. Saviour's, is proposing to erect church. Plans by McCartney, Collings & Co., Ltd., chartered architects and civil engineers, Central-chambers.

Colchester.—New theatre is to be built.

Colne.—Colne & District Co-operative Society, Ltd., proposing to acquire site at junction of Tennyson-rd. and Ruskin-av., for new branch stores. —T.C. passed plans:—10 houses, Halifax-rd., for T. Lovett, Son & Co., Ltd.; 8 houses, Causeway Foot estate, for W. W. Boothman.

Coventry.—Electricity Committee recommend that application be made to Electricity Commissioners for sanction to loan £115,154 for trunk mains in connection with Longford Generating Station.

Denton.—Chesters Brewery, Ltd., Ardwick Brewery, Manchester, are proposing to make improvements to Jolly Hatters Hotel, Town-lane. Plans been prepared by Brameld & Smith, architects, 4, Cannon-st.

Doncaster.—Members of St. Mary's Church, Wheatley, have £1,100 towards cost of erecting new Sunday schools. J. Blythe Richardson, L.R.I.B.A., 26, Printing House-st., architect.

Dublin.—Electricity sub-station is to be erected on a site at Lindsay-rd., Glasnevin.—City Commissioners acquired an additional 4¼ acres of land adjoining Drumcondra housing scheme.—City Commissioners sold to Sailors' and Soldiers' Land Trust an additional two acres on Drumcondra area, on which the Trust propose to build 20 houses.—Following plans been approved by City Architect:—22, 24 and 26, Exchequer-st., alterations and additions, J. Nicholls; Old Finglas-rd., 16 houses, Alex. Strain; Upper Sackville-st., rebuilding office building, site

* See also our List of Contracts, Competitions, etc.

of Edinburgh Hotel; Whitehall, 40 houses, Civil Service Housing Association, Ltd.

Dundee.—Cleansing Committee of T.C. decided to take offers for complete salvage and refuse disposal plant. Estimated £30,000, including alterations and repairs to existing buildings, etc.

Easington.—R.D.C. has received provisional approval from M.H. to erect 70 houses.

Eastbourne.—Corporation are considering construction of a bathing pool on beach to provide work for unemployed.

Eton.—R.D.C. passed plans:—Farnham Royal: 2 pairs of 2-storied houses at Chalvey, for T. McAll. Burnham: 20 2-storied houses, Orchard-rd., for E. A. Criddle; lavatory and offices, Dundee-rd., for Slough Estates, Ltd.; 20 1-storied houses on Spur, Burnham Residential estate, for J. E. Shuttleworth; 2-storied house and shop at Cippenham, for Mrs. F. E. Cullimore; 22 1-storied houses in Newrd., Cippenham, and a 2-storied house in Bath-rd., Burnham, for L. Pusey.

Folkestone.—T.C. passed plans:—Royal Victoria Hospital (owners) (J. L. S. Dahl, architect), additions to X-ray department; H. Durell (owner) (F. H. Castle, architect), 18 lock-up garages, Cheriton-rd; A. J. Cook (owner) (A. W. Cook architect), 3 houses, Burrow-rd.; Vicar and Churchwardens of Holy Trinity Church (owners) (Knapp, Fisher, Powell & Russell, architects), additions (south porch) Holy Trinity Church, Sandgate-rd.

Grantham.—Watch Committee recommended new police headquarters upon site at rear of Free Library.

Great Yarmouth.—T.C. are to build 41 houses on Maygrove estate.

Guildford.—T.C. agreed to buy premises in High-st. for £19,000 for municipal offices, and £11,000 for adapting premises.

Halifax.—T.C. passed plans:—Falcon Laundry Co., Ltd., 3 lock-up shops, workshops, garages, etc., Falcon Laundry; Mrs. G. H. Wilson, pair semi-detached houses, 12, 14, The Gardens, Heath-rd.; C. Smith, 8 houses, Leeds and Whitehall-rd.

Hemsworth.—U.D.C. received M.H. sanction to borrowing £4,000 for purchase of The Green, Hemsworth, for purpose of public market.

Hendon.—R.D.C. is to build 174 more houses.

Hove.—T.C. passed plans:—F. Brooksbank, 34 semi-detached houses and 58 garages, Aldrington-av.; J. H. Hackman, Ltd., 2 pairs semi-detached houses and garages, St. Leonard's-gardens; Hunter & Bedford, for F. H. Butler, 3 detached houses and garage, New Church-rd.; A. Matthews, 3 houses, Lorna-rd.

Hoyland-Nether.—Elementary school is to be erected to provide accommodation for 400 children. Plans by West Riding C.A.

Huddersfield.—Corporation decided to proceed with scheme for public baths upon site in Cambridge-rd.

Humshaugh.—Plans for a £2,300 village hall been prepared by L. E. Hetherington, architect.

Killarney.—It has been decided to carry out extensive enlargements at Post Office.

Leamington Spa.—Earl of Elgin has promised to lay foundation-stone of New Art Gallery and Museum, which is to be erected adjacent to Public Library.

Leigh.—T.C. passed plans:—4 houses, Sanderson's-croft, Hunt, Morris, Ashworth & Bullough; 4 houses, off Holden-rd., J. Eaves.

London (Fulham).—B.C. are considering plans for road-widening scheme at junction of Harwood-rd. and New King's-rd.

Macclesfield.—R.D.C. approved plans:—4 detached bungalows Carlton-rd., Poynton, for E. Clayton; house and offices Chester-rd., Poynton, for Mrs. Evelyn Preston Harrison.

Mansfield.—Plans being prepared for equipment of Field Mill football ground as greyhound racing track. H. B. Hobson, 188, Oxford-rd., Manchester, architect.

Mythlomroyd.—Plans been adopted for extensions to Wesleyan School, at £3,500.

Nelson.—T.C. passed plans for 10 houses in Halifax-rd., for T. Lovett, Son & Co., Ltd.

Newport (Mon.).—C.B. passed plans:—Conway-rd., 2 shops and houses, Jones, Jones & Co., Scard-st.; Caerleon-rd., new road off, 24 houses, J. Fisk, Cumberland-rd.; Chepstow-rd., 30 houses, J. G. Dowden, Chepstow-rd.

Newry.—R.D.C. received sanction to erection of 69 cottages.

North Harrow.—New cinema is being built in Pinner-rd.

North Walsham.—Paston Grammar School is to be enlarged, at £6,870.

Nottingham.—Committee of Y.M.C.A. proposing to erect premises at corner of Shakespeare-st. and Sherwood-st. Plans by W. B. Starr & Hall, 12, Victoria-st.

Oldham.—North Western Road Car Co., Ltd., proposes to erect a 'bus garage in Wilson-st. at rear of Manley-rd. Plans by Wrathmell & Blackshaw, (L.R.I.B.A., architects, Queen's-buildings, St. Peter's-sq., Stockport.—H.M.O.W. are to make extensive alterations to buildings in Chaucer-st.—Members of Primitive Methodist Church, Healds Green, Chadderton, near Oldham, proposing to erect new church. Architect not yet been appointed.

Oxford.—T.C. passed plans:—F. Organ, Cowley-rd., 2 pairs of houses, Glanville-rd.; T. A. Hicks, 238, Cowley-rd., 9 lock-up motor-sheds, Collins-st.

Portsmouth.—T.C. passed plans:—W. S. B. Cox, business premises and 4 shops, High-st., Cosham; R. J. Winnicott, hall and offices, 226-230, Fratton-rd.; McCormick & Son, 29 houses, Target-rd.; H. Cooper-Smith, 3 lock-up garages, Lennox-rd.; E. & A. Sprigings, 3 shops and flats, Osborne and Serpentine-rds.; Brown & Fuller, 6 houses, Clensthorne-rd.; Cake & Macpherson, 4 houses, Goldsmith-av.; F. Elliott, business premises, Copnor-rd.; Mouncher & Son, 4 houses, Tangier-rd.; C. W. Stigant & Son, 8 garages, St. Colman's-av., Cosham; A. H. Le Santos, 6 houses, Lichfield-rd.; J. E. Jones, new college buildings, London-rd., Hilsea; W. A. Roberts, 6 houses, off Langstone-rd.

Prestwich.—Council proposing to submit to M.H. scheme of extensions to sewage works, at £12,000. Plans by engineer, Town Hall.

Ramsgate.—Home for children is to be built at Ramsgate as memorial to late Alderman D. Chapman, of Hammersmith B.C.

Reading.—Scheme to cost £100,000 is being planned for relief roadway.

Romford.—New company has been formed under the title of "Lord Lambourne Masonic Hall" (Romford), Ltd., 23, Charlbury-gardens, Seven Kings, Ilford, for erection of a hall for masonic and other purposes, etc.

Salford.—Plans been approved by City Council: Dining rooms and store at Greengate, for Irwell & Greengate Rubber Co., Ltd.; additions to Dye Works, Blackburn-st., J. Knight, F.R.I.B.A., 5, Cross-st., Manchester; alterations to Derby Arms, Derby-st., N. H. Hacking, architect, 5, Blackfriars-st., Manchester; Synagogue and classrooms, Bury Old-rd., Broughton, Pendleton & Dickinson, L.R.I.B.A., 16, Brazennose-st., Manchester.

Sheffield.—The South-st. United Methodist Chapel has been sold to a London multiple firm for an up-to-date store.—John Smith's Tadcaster Brewery Co., Ltd., proposing to erect new licensed premises having frontages to Southey Green-rd. and Southey-hill. Plans by B. Wilson, High-st., Tadcaster.—M.H. sanctioned borrowing by T.C. of £32,168 for erection of 92 houses and provision of gas mains, Scheme No. 11, Longley estate.—Housing Sub-Committee recommend additional 375 sq. yds. of land forming part of Longley estate as site for electricity sub-station.—M.H. also sanctioned borrowing of £18,800 for street and sewer works on Longley estate.—Vicar, Rev. J. S. Speakman, and members of St. Aidan's are raising funds for erecting a new church.—Members of St. Timothy's Church, Crookes, Sheffield, are also proposing to erect a new parochial hall. Fowler, Potter and Sandford, 8, St. James'-st., been appointed to prepare plans.—Nicholson, Barber and Hastings, auctioneers, been instrumental in negotiating purchase of portion of premises, 33, Fargate, occupied by J. B. Eaton, Ltd., which was offered for sale by auction. Whole site comprises 1,470 sq. yds. and is freehold. J. B. Eaton, Ltd., purchasers, propose making extensive alterations. An architect not yet appointed.—T.C. passed plans:—six houses, Abbey-lane, for W. Samuel; six houses, Ansell-rd., for A. J. Belton; six houses, Vainor-rd., for J. Reed; 18 houses, Ansell-rd., for J. Ramsden; six houses, Sandygate-rd., for T. W. Knowles & Son; 92 houses, Longley estate, for Corporation.

Smethwick.—C.B. resolved to acquire land at Stanhope-rd.—Council approved lay-out by B.E. of Old Chapel estate at £44,613.—Plans passed: six houses, Silverton-rd., W. Lees & Sons; six houses, Hugh-rd., —. Lloyd; additions Mineral Water Works, Halfords-st., Cresswell & Son.

Stockport.—Dane Bank Estate Co., Ltd., Disley, proposing to erect houses on Dane Bank estate. Plans and lay-out by P. A. Hinchliffe, F.R.I.B.A., architect, 14, Regent-st., Barnsley.

Stretford.—U.D.C. approve extensions to sub-stations, at £5,900.—Council also resolved to approve erection of new sub-station for Urmston-lane district on Urmston boundary, at £2,000.—M.H. sanctioned borrowing of sums of £9,905, £1,819 and £967, for purposes of public baths in Trafford Park.—Further consideration been given to heating installation at Town Hall.—Plans passed:—15 houses, Kendal and Derwent-rds., J. Maunders; 10 houses, Low Moss-lane, Howard & Waring.

Sunderland.—Baths Committee recommend provision of additional swimming bath at High-st. baths at £6,750.

Surbiton.—U.D.C. passed plans for 4 houses, Malvern-rd., Gingell & Lane.

Sutton.—U.D.C. passed plans:—137 houses Ridge estate, for J. E. Clark; ten garages rear 149-159, High-st., for L. Hartley; alterations and additions to the Church of Our Lady of the Rosary, St. Barnabas'-rd.; extensions to 114, High-st. (Napper's); house, 272, Benhill-rd., for London and Provincial Building Co.; four shops, Grove-rd., for Dr. D. G. Halsted; fourteen garages and a shed at rear of houses, St. James'-rd., for Thorn and Son; three houses in Downs-rd., for E. Bunch.

Sutton Coldfield.—T.C. passed plans:—six houses, Hollyfield-rd., for C. P. Trafford; cinema, Mere Green-rd., for Turner & Parish.

Swanscombe.—Local Council to build 34 houses on church field.

Swansea.—C.B. passed plans:—Gospell hall, Swansea-rd., Dunvant, for Christian Brethren; 2 houses, Hazel-rd., for D. J. Price & Son; 6 houses, Moorside-rd., for G. Symons; garages, Osborne Hotel, Rotherslade-rd., for executors of late D. J. Bassett; sub-station, Gower-rd., Killay, and Caswell-rd., for Electricity Committee.

Thurrock.—Essex E.C. decided to erect timber school.

Tilbury.—U.D.C. adopted plans for 315 houses in South Ward at £390 per house.

Tiverton.—R.D.C. are to seek sanction to loan of £15,500 for 50 houses.—Housing Committee are also to consider erection of further 100 houses.

Torquay.—T.C. passed plans:—Extensions to Hotel Metropole, Belgrave-rd., for F. E. Hall; bungalow, comprising 5 rooms and bathroom, Barton-rd., for Miss Dale; 8 houses, Daison estate, for Harris & Breyley; 3 bungalows, Beechfield-av., Barton-rd., for H. W. Lloyd; lay-out for 42 houses, Shiphay, for A. Chippendale.

Tottenham.—M.A.B. recommend that approval be given to renewal, at £250, of roof of the recreation hall and messroom building at North-Eastern Hospital.

Tottington.—Members of Conservative Club, Kirklees-st., proposing to erect premises. Plans by John Whittaker and Roger Wood, 10, Bolton-st., Bury.—Rock Investment Co., Ltd., are to acquire Kirklees Mill from Kirklees Artificial Silk Co.

Truro.—T.C. instructed F. A. Barnes, surveyor, to prepare plans for 20 houses on Hendra site.

Uckfield.—Approval of M.H. been received by U.D.C. to proceed with erection of 6 houses in Selby-rd. and 6 in Ridgewood.

Walsall.—Fr. Henry McDonnell, rector of St. Patrick's Church, Walsall, purchased a foundry adjoining church which separates mixed school from junior department. When buildings have been demolished, site will be added to school playground. Additional ground will enable Fr. McDonnell to build new parish hall and later on his new church.

Wanstead.—Scheme been proposed for swimming bath for County High school.

Warrington.—Trustees of St. John's Presbyterian Church, Wilderspool-causeway, proposing to erect church hall. Plans by Morter & Dobie, L. & F.R.I.B.A., architects, 36, The Temple, Dale-st., Liverpool.—T.C. propose to erect shelter in Orford-park.

Watford.—T.C. passed plans:—Riding school, etc., rear Clarendon-rd., for A. Masser; cinema and shops, The Parade, for Purple Picture Palace (Watford), Ltd.; factory premises, Cherry Tree-rd., for Kempster & Williams; 51 houses, Leggatts Rise estate, for Kempster & Williams; 4 houses and garages, Hempstead-rd., for L. Raymond; pair of semi-detached houses with garages, The Coppice, for G. Miles; 4 houses, The Coppice, for W. King; tennis pavilion, West Herts ground, Cassio-rd., for West Herts Tennis Club; 4 detached houses, St. Albans-rd., for W. King & Sons.

Weymouth.—T.C. passed plans:—S. Jackson & Sons, pair of houses in Southdown-rd. and two pairs of houses in Southlands-rd.; Andrews & Andrews (for G. Taylor) semi-detached residences Radipole Spa estate.

Whitefield.—Extensions are to be made at works of Mark Fletcher & Sons, Ltd., Moss-lane. A. Clayton, architect, Duchy-chambers, Clarence-st., Manchester. Estimated cost is £40,000.

Wigan.—B.E. prepared plans for elementary school in Pemberton district to accommodate 360 children.

Windlesham.—Surveyor been instructed to prepare plans for 8 houses at Lightwater and 6 at Windlesham.

Witheridge.—Southmolton R.D.C. considered alternative plans prepared by W. S. Gardner, for bridge over Crowdhole-rd., Witheridge, and decided upon scheme, estimated at £284 10s.

FIRES.

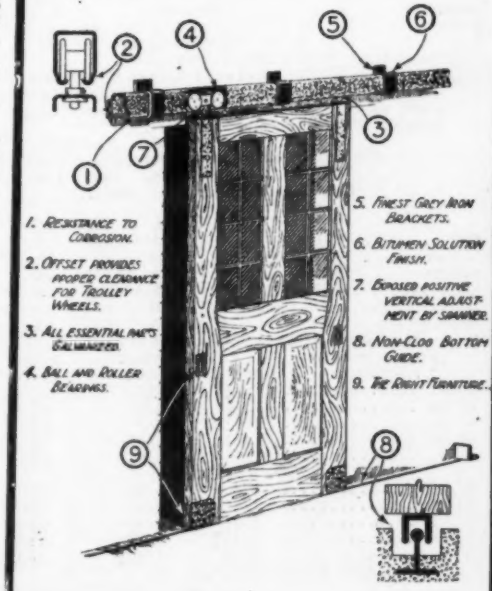
Holbeach (Lincs.).—Barrington Flour Mills have been destroyed by fire.

SLIDING DOOR GEAR

FOR FACTORIES, GARAGES, SCHOOLS, ETC.

Nine essential features of "Henderson" Door Gear

TRADE MARK


1. RESISTANCE TO CORROSION.
2. OFFSET PROVIDES PROPER CLEARANCE FOR TROLLEY WHEELS.
3. ALL ESSENTIAL RAILS GALVANIZED.
4. BALL AND ROLLER BEARINGS.
5. FINEST GREY IRON BRACKETS.
6. BITUMEN SOLUTION FINISH.
7. EXPOSED POSITIVE VERTICAL ADJUSTMENT BY SPANNER.
8. NON-CLOG BOTTOM GUIDE.
9. THE RIGHT FURNITURE.

WRITE FOR BOUND CATALOGUE B26 TO

P. C. HENDERSON, LIMITED.

BARKING, ESSEX. PHONE: GRANGEWOOD 0247.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 5 6
Second Hard Stocks	3 19 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at			
King's Cross	2 12 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster	2 14 3	Do. Bullnose	9 15 0
Do., Bullnose	3 6 3	Blue Wire Cuts	7 5 0
Best Stourbridge Fire Brick:—			
2½ in.	8 11 0	3 in.	10 3 0
Glazed Bricks—			
Best White Ivory, and Salt Glazed Stretchers	21 0 0	D'ble Str'tch'rs	29 10 0
		D'ble Headers	26 10 0
Headers	20 10 0	One Side and two Ends	30 10 0
Quoins, Bullnose and 4½ in. Flats	27 10 0	Two Sides and one End	31 10 0
		Splays and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white Other colours. Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London

	s. d.		s. d.
2 in. per yd. super.	1 11	3 in. per yd. super	2 9
2½ in " "	2 4	4 in. " "	3 6

	s. d.	
Thames Ballast	10 6 per yd.	delivered 2 miles radius Paddington.
Pit Sand	13 9 " "	
Thames Sand	14 6 " "	
Best Washed Sand	14 6 " "	
¾ in. Shingle for Ferro-Concrete	12 9 " "	
¾ in.	14 0 " "	
¾ in. Broken Brick	11 6 " "	
Pan Breeze	8 0 " "	

Per ton delivered in London area in full van loads.

Best Portland Cement. British.

Standard Specification. Test £2 13 0 to £2 15 0 46s. alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 3 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" " Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	1 17 6
Hair per cwt.	2 2 6
Granite Chippings	1 12 0

Note.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

	s. d.
Bath Stone.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 10
Beer Stone—Random Block— Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½
Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.	
Portland Stone.— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4½
Do. do. delivered on road wagons at above stations, per ft. cube	4 5½
White unsebed, 3d. per ft. cube extra.	
Note.—1d. per ft. cube extra for every foot over 20 ft. average, and ½d. beyond 30 ft.	
Hopton-Wood Stone— Delivered at any Goods Station, London.	s. d.
Random blocks from 10 ft. and over P. ft. cb.	17 0
Sawn two sides "	27 0
Sawn three or four sides "	32 0
York Stone, Blue—*Robin Hood Quality.* Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) Per ft. super	5 6
6 in. rubbed two sides, ditto "	6 0
3 in. sawn two sides slabs (random sizes) "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
1½ in. to 2 in. ditto, ditto "	1 3½
Hard York— Delivered at any Goods Station, London.	
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5 1½
6 in. rubbed two sides, ditto "	6 1½
4 in. sawn two sides slabs (random sizes) "	2 1½
3 in. ditto ditto "	2 10
2 in. self-faced random flags .. Per yd. super.	8 8

CAST STONE.

Delivered in London area in full van loads, per ft. cube: Plain, 8s. 6d.; Moulded, 9s 6d; Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£30 0	3 × 6	£21 0
4 × 9	26 0	3 × 11	25 0
4 × 8	25 0	2 × 11	26 0
4 × 7	23 0	3 × 9	24 0
3 × 8	22 0	2½ × 9	24 0
3 × 7	22 0	3 × 4½	21 0
2½ × 7	21 0	3 × 4	21 0

PLANED BOARDS.

1 × 11	£30 0	1 × 9	£28 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅝	18/-	1¼	30/-
¾	21/-	1½	34/-
1	24/-		

TONGUED AND GROOVED FLOORING

Inches.	per sq.
1	24/-
1¼	30/-
1½	34/-

MATCHING (BEST).

Inches.	per sq.
⅝	16/6
¾	19/-
1	24/-

Ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾ × 2	per 100 ft. 2 6	Per bundle	2 6

1" AND UP THICK.

	£ s. d.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 16 0	to 0 18 0
Dry American and/or Japanese Figured Oak, ft. cube	0 14 0	to 0 15 0
Dry American and/or Japanese Plain Oak, ft. cube	0 10 0	to 0 13 0
Dry sq. edged Honduras Mahogany, ft. cube	0 15 0	to 0 18 0
Dry Log cut Honduras Mahogany, ft. cube	0 16 0	to 1 1 0
Dry Cuba Mahogany, ft. cube	1 1 0	to 1 10 0
Dry Teak, ft. cube	0 13 0	to 0 15 0
Dry American Whitewood, ft. cube	0 10 0	to 0 14 0
Best Scotch Glue, per cwt.	4 10 0	to —
Liquid Glue, per cwt.	4 7 0	to 5 10 0

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£ s. d.		£ s. d.
24 by 12	32 18 4	18 by 10	18 12 11
22 by 12	29 17 11	18 by 9	16 9 2
22 by 11	27 14 2	16 by 10	15 12 6
20 by 12	26 5 0	16 by 8	12 3 9
20 by 10	22 10 0		

TILES.

Delivered at London rate stations in full truckloads of not less than 6 tons. Per 1,000. f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district	5 7 6
ditto hand-made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Machine-made	0 9 0

METALS.

Joists, Girders, &c., to London Station, per Ton—

	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
" Stanchions	16 10 0
In Roof Work	10 10 0

Mild Steel Rounds.—To London Station, per ton

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	12 0 0	⅝ in. to ¾ in.	10 15 0
⅜ in.	11 0 0	⅞ in. to 2½ in.	10 10 0

Wrought-Iron Tubes and Fittings—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes. Wrought Mild Steel.	Tubes. Gen-uine Staffs. Iron.	Fittings. ½ in. and under.	Fittings. Over ½ in.	Flanges. ½ in. and under.	Flanges. Over ½ in.
	%	%	%	%	%	%
Gas	67½	50	42½	45	52½	55
Water	63½	46½	37½	40	47½	50
Steam	60	42½	32½	35	42½	45
Galv. gas	55	37½	32½	35	42½	45
Galv. water	50	32½	27½	30	37½	40
Galv. steam	45	27½	22½	25	32½	35

C.I.—Half-Round Gutters—London Prices ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.
O.G. Gutters.			
3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

Rain-Water Pipes, &c.

per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/10½	1/3	1/9½
2½ in. "	2/0½	1/4½	2/1½
3 in. "	2/6	1/9	2/7½
3½ in. "	2/11½	2/0½	3/0½
4 in. "	3/5	2/6½	3/8½

L.C.C. Coated Soil Pipes—London Prices ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. "	3 9	2 7½	3 7
3 in. "	4 6	2 10	4 2½
3½ in. "	4 11½	3 7	4 11½
4 in. "	5 5½	4 0½	5 9

L.C.C. Coated Drain Pipes—London Prices ex Works

	Pipe, angles, stock angles	Bends, stock Branches.
	s d.	s. d. s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1 8 0½
4 in. " "	6 2	5 8 10 6
5 in. " "	7 2	10 10 17 1
6 in. " "	8 6	13 2 21 9

Gasken for jointing, 38/6 per cwt.

	Per ton in London. £ s. d.		£ s. d.
Iron—			
Common bars	13 0 0	to	14 10 0
Staffordshire Crown Bars— Good merchant quality	14 5 0	to	15 15 0
Staffordshire Marked Bars	16 5 0	..	17 5 0
Mild Steel Bars	10 0 0	..	11 0 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0	..	11 0 0
Hoop iron, basis price	12 0 0	..	13 0 0
" Galvanised	27 0 0	..	28 0 0
Soft Steel Sheets, Black— Ordinary sizes, to 20 g.	13 5 0	..	14 5 0
" " " 24 g.	14 5 0	..	15 5 0
" " " 26 g.	16 5 0	..	17 5 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16 10 0	..	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18 10 0	..	20 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 0 0	..	19 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 10 0	..	19 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	21 10 0	..	22 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	..	26 10 0
Cut Nails, 3 in. to 6 in.	19 0 0		

(Under 3 in. usual trade extras.)

Metal Windows.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
Lead—Sheet, English, 4 lb. and up	28 0 0
Pipe in coils	28 10 0
Soil pipe	31 10 0
Compo pipe	32 10 0

Note.—Country delivery, 20s. per ton extra; less under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes. 5s. cwt. extra.

Oil lead, ex London area, at Mills per ton	18 5 0

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	1 1
Strong sheet "	1 0
Thin "	1 1
Copper nails "	2 3
Copper wire "	2 4

PLUMBERS' BRASS WORK.

Delivered in London.

New River Pattern Screw Down Bib Cocks for Iron.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

New River Pattern Screw Down Stop Cocks and Unions.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

River Pattern Screw Down Main Ferrules.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

Caps and Screws.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

Double Nut Boiler Screws.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

Brass Sleeves.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

New River Pattern Croydon Ball Valves, S.J.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

Drawn Lead P. & S. Traps with Brass Cleaning Screw.

	1¼ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- "

Tin.—English Ingots, 3/1 per lb. Solder.—Plumber's 1/3, Tinmen's 1/6, Blowpipe 1/7 per lb.

PAINTS, &c.

			s. d.
Raw Linseed Oil,	in pipes	per gallon	0 3 11
" " "	in barrels ..	"	0 3 1
" " "	in drums ..	"	0 3 3
Boiled " "	in barrels ..	"	0 3 2
" " "	in drums ..	"	0 3 4
Turpentine	in barrels	"	0 3 10
"	in drums (10 galls.)	"	0 4 0
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.)			50 0 0

* The information given on this page has been specially compiled for The Builder, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

PAINTS, &c. (*contd.*)

		£	s.	d.
Genuine White Lead Paint—"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J." Brand, and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	68	10	0
Red Lead, Dry (packages extra)	per ton	38	10	0
Best Linseed Oil Putty	per cwt.	0	15	0
Filicol	"	0	15	6
Size. XD quality	ftkn.	0	3	6

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ..	2½d.	32 oz. fourths	6½d.
15 ,, thirds ..	3½d.	32 ,, thirds	8½d.
21 ,, fourths ..	3½d.	Obscured Sheet, 15 oz.	3½d.
21 ,, thirds ..	4½d.	,, ,, 21 ,,	4½d.
26 ,, fourths	4½d.	Fluted 15oz.6½d.,21oz.	9d.
26 ,, thirds ..	6½d.	En'lled 15 oz.4½d.,21oz.6½d.	

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8½d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black		0	7	6
Berlin Black		0	14	6
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine		0	9	0
Cuirass Black Enamel		0	7	0

EMPIRE TIMBERS

Lt.-Gen. Sir William Furse, K.C.B., D.S.O., Director of the Imperial Institute, has asked the Council of the R.I.B.A., to draw the attention of members to a recently issued publication of the Imperial Institute dealing with a selection of useful timbers derived from overseas countries of the Empire. Under the title of "A Descriptive List of Some Empire Timbers Recommended by the Imperial Institute Advisory Committee on Timbers," the book represents the result of inquiries carried out by the Advisory Committee, on which the R.I.B.A. is represented, with the object of bringing to the notice of users of timber in this country selected Empire woods which, in the committee's opinion, merit wider attention than at present obtains, either as substitutes for foreign woods or as "new" timbers. In each case the trade and botanical names of the timber are given, followed by a brief account of the characters and working qualities of the wood, the purposes for which it is suitable, and a statement regarding the sizes in which it is obtainable and the approximate market price. The book contains, in addition, reprints of a number of official reports of the committee which have been published in the Bulletin of the Imperial Institute, and a table of mechanical strengths of a number of the woods. Sir William Furse has kindly sent a limited number of copies of the book, which will be sent to members interested on application to the secretary. The publication is on sale at the Imperial Institute, S. Kensington, S.W.7, price 2s.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND

Aberdeen.—Extensions.—The Aberdeen Harbour Board has forwarded plans to the Town Council for approval of the extensions and improvements to the Fish Market.

Ellon.—Housing.—The District Committee have reported that the County Standing Joint Committee has given sanction for the erection of three blocks of houses at Tarves at a cost of £2,100, and two blocks at Hatton of Cruden at a cost of £1,400. It was also agreed to apply to the Board of Health for their approval to proceed with the erection of houses at Newburgh.

Aberdeen.—Restoration.—A contract involving an estimated expenditure of over £32,000, for the restoration of the main Deeside and Donside roads, so far as they come within the jurisdiction of the Aberdeen District Committee of the County Council, has been approved of by that Committee. The contractors are Messrs. W. Tawse, Ltd., of Aberdeen.

Alford.—Housing.—The shortage of houses at Alford has been discussed by a meeting of the Alford District Committee, and it was agreed that the architect should go into the whole matter and report.

Glasgow.—Extension.—The Libraries Committee of the Corporation recommend that the main reading room in the Mitchell Library be extended at an estimated cost of £3,500.

Dundee.—Buildings.—Plans and sections of the following proposed new buildings, etc., have been lodged at the office of the City Engineer:—Albert-street and Langlands-street—alterations for Trustees of late William Gibb; Mr. James H. Langlands, architect, 31. Albert-square. Blackness-road—additions for Dundee Education Authority. Clarendon-terrace—alterations for Mr. J. M. McGillivray; Messrs. Thoms & Wilkie, architects, 21, South Tay-street. Constitution-road—additions for the Willison Bell-street U.F. Church; Messrs. Maclaren, Soutar & Salmond, architects, 15, South Tay-street. Perth-road—alterations for Messrs. J. & J. Gray; Mr. W. M. Patrick, architect, 26, Yeaman-shore.

Arbroath.—Improvements.—The Arbroath Town Council has approved of the tender of £4,150 by the Caledon Shipbuilding and Engineering Co., Ltd., Dundee, for the erection of new dock-gates at the harbour. Mr. J. Hannay Thompson, Dundee, is the engineer.

Giffnock.—Widening.—The allocation of the cost between the Ministry of Transport, the Upper District Committee of Renfrewshire, and the Corporation of Glasgow, of the widening of Eastwood Mains-road, between Speirs Bridge, Thornliebank, and Eastwood Toll, Giffnock, has been fixed.

Glasgow.—Building.—The following linings have been granted by the Glasgow Dean of Guild Court:—Trustees of the Roman Catholic Archdiocese of Glasgow—church at Baldwin-avenue and Knightswood-road, Knightswood; Kenmure Tennis Club—clubhouse at Auchinairn-road; Second Scottish National Housing Co.—houses at Ardgay, Ochil, Glenalmond and Culrain Streets, Shettleston; Rev. David A. Millar—church halls at Braidfauld-road and a proposed new road; Glasgow Education Authority—temporary school at Campsie, M'Farlane and Mansel-streets, Springburn; General Omnibus Co.—additions to premises at Waterloo-street; Kelvinside United Free Church—alterations and additions to church; R. K. M. Lindsay, wright and contractor—16 semi-detached houses in Hatton-gardens and Crookston-road; Lauder & Shaw, builders—houses and shop at Crookston-road.

Builders' Estates.

Mr. William Matthew, retired builder, 187, Forest-avenue, Aberdeen, left £7,854.

Mr. Douglas Craig White, builder, 23, Comiston-drive, Edinburgh, £9,828.

Mr. Allan Muir, builder, 134, Nithsdale-drive, Strathbungo, £24,755.

BUILDING TRADE WAGES IN SCOTLAND.*

The following are the present rate of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons'‡ Bricklayers'‡ Plasterers'†
Aberdeen	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Airdrie	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Alexandria	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Arbroath	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/5½	1/1
Ayr	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Bathgate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/–
Bo'ness	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Coatbridge	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Dumbarton	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Dumfries	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/6½	1/2
Dundee	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3
Dunfermline	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	‡1/2½ †1/3–1/3½
Edinburgh	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/6½	1/7	1/6½	1/7	1/6½	1/6½	1/7	1/2
Glasgow	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Greenock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Hamilton	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Hawick	1/7	1/7	1/7	1/7–1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/– to 1/2
Kilmarnock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Kirkcaldy	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3–1/3½
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/–
Lanark	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Leith	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Motherwell	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Perth	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Stirling	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	1/2½
Stirlingshire (Eastern District)	1/7½	1/9	1/7½	1/9	1/7½	1/7½	1/8	1/2½
Wishaw	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 707.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

		s.	d.
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	" "	9	6
Three-quarter-inch on flats in two thicknesses	" "	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Beer stone and all labour fixed	" "	15	0
Portland stone fixed	" "	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	"	80	9
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	" "	5	6
Do. roofs, floors and partitions	" "	6	0
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	0	11
Centre for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.	—	44/6	53/-	60/6
Do. tongued and grooved	"	—	49/-	57/6	65/-
Do. matchings	"	45/-	51/-	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/-	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.

		1¼"	1½"	2"
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	"	1/4	1/6	1/9
Add if cross-tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	" "	6	0
Add if ramped	" "	12	0
Add if wreathed	" "	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roof work	"	27	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	"	1/9	2/-	2/6	3/3
Rain-water pipes with ears	"	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	41	6
Do. Do. in flats	"	40	6
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	" "	1	3
Copper nailing	" "	0	3

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	"	1/8	2/2	2/7	3/10	—	—
Do. soil	"	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	—
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"	—	—	—	14/7	19/6	—
Bib cocks and joints	"	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	"	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard. sup.	2	6
Do. Do. Sirapite	" "	2	9
Do. Do. Keen's	" "	4	0
Add saw lathing	" "	1	7
Add metal lathing	" "	2	6
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	" "	2	2
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	" "	1	0
Obscured sheet	" "	1	1
⅛-in. rolled plate	" "	0	9
¼-in. rough rolled or cast plate	" "	0	10½
¼-in. wired cast plate	" "	1	4

PAINTER

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting, 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece, 2/- to	4/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployments Acts and from 1s. 6d. per £100 for Fire Insurance.

The whole of the information given on this page is copyright.

NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

EXCELDA HOUSING SOCIETY, LTD. (227,463). Registered January 20. 1, Newhall-street, Birmingham. Builders and contractors, etc. Nominal capital, £100.

SWARKESTONE SAND AND GRAVELS, LTD. (227,394). Registered January 17. Ambergate, near Derby. Sand and gravel works at Swarkestone. Nominal capital, £3,000.

GLOBE COMPANY (ASHFORD), LTD. (227,420). Registered, January 18. Stanwell-road, Ashford. Importers and builders' merchants, ironfounders and mechanical engineers, etc. Nominal capital, £1,000.

WM. DALEY & Co., LTD. (227,476). Registered January 20. 58, Birch-grove, West Acton, W. 3. Nominal capital, £5,000.

T. RYAN, SOMERVILLE & Co., LTD. (227,406). Registered January 18. Hindlow, Buxton, Derbyshire. Quarry masters and stone merchants, etc. Nominal capital, £25,000.

PICKLES BROTHERS (BUILDERS), LTD. (227,491). Registered January 21. Mile Thorn, Halifax. Builder and contractor. Nominal capital, £7,000.

JOHN JONES & SON (LIVERPOOL), LTD. (227,534). Registered January 23. 258, Longmoor-lane, Walton, Liverpool. Monumental sculptors and stonemasons. Nominal capital, £600.

B. W. DAVIS, LTD. (227,542). Registered January 24. 4-6, Weaman-street, Birmingham. Plumbers and builders' merchants, etc. Nominal capital, £20,000.

WILLIAM WALKER & SONS (HANLEY), LTD. (227,581). Registered January 25. Century Works, Brook-street, Hanley, Stoke-on-Trent. Grinders and preparers of flint stone glazes, clay, colours, and other materials used in the manufacture of earthenware, etc. Nominal capital, £30,000.

PROTHEROE, LTD. (227,608). Registered January 26. Builders and contractors, etc. Nominal capital, £3,000.

VUILLARD & STRAUSS, LTD. (227,577). Registered January 25. 108/110, Goldenlane, E.C.1. Pipe manufacturers and dealers. Nominal capital, £5,000.

ENFIELD SAND AND BALLAST Co., LTD. (227,791). Registered February 3. 67, High-street, Ponders End, Middlesex. Nominal capital, £500.

PARAGON BUILDING CORPORATION, LTD. (227,684). Registered January 30. 50/51, High Holborn, W.C.1. Builders, etc. Nominal capital, £10,000.

MILKWALL BRICKWORKS, LTD. (227,770). Registered February 2. 120/122, Victoria-street, S.W. Nominal capital, £1,500.

W. SUGDEN, LTD. (227,747). Registered February 1. Canal Wharf, Stockbridge, Keighley, Yorks. Sand, lime and breeze merchants and factors, etc. Nominal capital, £5,000.

S. F. HOPLEY & Co., LTD. (227,942). Registered February 9. Public works contractor. Prestatyn, Flintshire. Nominal capital, £5,000.

PAINTSPRAY, LTD. (227,830). Registered February 4. Painters and decorators, etc. Nominal capital, £2,000.

REGENCY DEVELOPMENT Co., LTD. (227,877). Registered February 7. Eldon House, Eldon-street, E.C. 2. Engineers, contractors and builders, etc. Nominal capital, £1,000.

FENNER, PANTON & Co., LTD. (227,591). Registered January 26. Londesborough-street, Hull. Builders and contractors, etc. Nominal capital, £10,000.

J. ENRIGHT, LTD. (227,679). Registered January 30. Manufacturers of and dealers in gravel, stone, lime, and builders' requisites, etc. Nominal capital, £2,000.

THAKEHAM TILE AND TRADING Co., LTD. (227,689). Registered January 30. 58, Russell-square, W.C.1. Tile, slab and block manufacturer. Nominal capital, £3,000.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Tuesday evening.

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

Accrington.—Painting and decorating inside and outside of Antley Wesleyan Church. Mr. J. H. Bolitho, 24, Tremellen Street:—

*J. Grimshaw, Oswaldtwistle	£240 0 0

Arbroath.—New dock gates at the harbour, for the T.C.:—

*Caledon Shipbuilding & Engineering Co., Dundee	£4,150

Basford.—Sewage disposal works comprising screening and detritus chambers, No. 2 Dortmund settling tanks, dosing chambers, bacterial filter beds humus tank, mud drying beds, together with small pumping station and rising main and appurtenant works, for the R.D.C. Mr. Stephen Maylan, engineer and surveyor:—

Matthew Arundel, Wakefield	£17,863 19 6
Jonathan Partington, Ltd., Manchester	16,680 0 0
Anglo-Danish Concrete Construction Co., Ltd., London	14,592 17 10
Stewart and Partners, Ltd., London	14,250 0 0
H. Arnold and Son, Ltd., Doncaster	13,983 0 0
C. S. Johnson, Leicester	13,759 19 2
J. Bentley and Co., Bradford	13,330 12 6
V. B. Graham, Barnston, Near Birkenhead	13,319 1 3
Hussey, Egan and Pickmere, Birmingham	13,317 1 10
Warwickshire Bridge and Engineering Co., Banbury	13,300 0 0
Ward and Tetley, Bradford	12,394 18 6
Samuel Johnson and Son, Ltd. Mirfield	12,338 0 0
J. E. Jervis, Ltd., Long Eaton	12,247 0 0
A. H. Price and Co., Nottingham	12,229 7 7
E. Somerfield and Sons, West Bridgford, Notts	11,954 0 2
W. W. Tomlinson, South Normanton	11,800 0 0
A. Earnshaw and Son (Ilkeston), Ltd., Ilkeston	11,600 0 0
C. S. Tomlinson, Alfreton	11,537 18 6
R. A. Davies, A.M.I.C.E., Birmingham	11,528 9 0
Provincial Construction Co., Ltd., Kiveton Park	11,450 0 0
H. Sewell, Ilkeston	11,300 0 0
Civil Engineering Constructions, Cardiff	10,907 16 8
Swift Bros. and Haslam, Doncaster	10,820 0 0
H. Tattershall (Junior), Nottingham	10,678 0 0
*J. Payne, Crich, near Matlock	10,589 1 0

Billingham.—Cinema for the Haverton Hill Picture Co. Messrs. Kitchen & Archibald, F. & L.R.I.B.A., architects, 21, Albert-road, Middlesbrough:—

*Stephen Coates, Ltd., Middlesbrough.	

Castlersland.—Library, for the Kerry County Council:—

P. Courtney	£3,497
A. Hartnett	2,848
J. Cullinane	2,600
*J. O'Connor	2,540

Coleshill Hall.—Mental Hospital for the Birmingham Corporation. Mr. Herbert H. Humphries, City Engineer and Surveyor. Quantities by Mr. Anthony Rowse, Colmore-row, Birmingham:—

*Maddocks & Walford, Birmingham.	

Dorchester.—Erection of St. Mary's Vicarage. Mr. S. A. Jackson, L.R.I.B.A., architect, National Provincial Bank-chambers:—

W. E. Relleen, Ilminster	£2,588
Jesty & Baker, Weymouth	2,475
Bird & Cox, Weymouth	2,450
Frank Box, Bournemouth	2,437
C. E. Slade, Dorchester	2,350
J. F. Herridge, Dorchester	2,300
A. E. Pickett, Dorchester	2,225
*Watts Bros., Dorchester	2,210

Dublin.—Boundary wall 570 yards by 5 ft. 6 in. high, between the Corporation lands and the lands of All Hallows' College, Drumcondra, for the City Commissioners:—

*P. F. Fearon & Sons, Ranelagh	£997

Falmouth.—Additions and alterations to The Grapes Inn, for Messrs. J. A. Devenish & Co., Ltd. Mr. L. Winn, L.R.I.B.A., architect, Redruth:—

*H. S. Hancock, Falmouth.	

Greystones.—Extensions to retaining wall, for the County Wicklow Board of Health:—

T. Archer & Sons, Greystones	£3,133
*J. Moore, Dublin	2,634

Guildford.—Erection of pump houses and manager's residence, for the Corporation. Mr. Percy Griffith, consulting engineer, 39, Victoria-street, Westminster, S.W.1:—

F. & H. T. Higgs, Ltd.	£13,350
Holloway Bros. (London), Ltd.	12,459
J. T. Mackley & Co.	12,130
Geo. Parker & Son, Ltd.	11,985
*Thomas & Edge	11,873
A. E. Farr	11,776

Hayle (Cornwall).—Shop, for Mr. W. Trevithick. Mr. L. Winn, L.R.I.B.A., architect:—

*E. G. Newton, Hayle.	

Hull.—Two ferro-concrete bridges, 40 ft. span, to be constructed across the Holderness-drain at Portobello-street and St. John's-grove, for the Corporation. City Engineer:—

*Sangwin, Ltd., Hull	£1,688 10 8

Ireland.—The following contracts have been placed by the Commissioners of Public Works:—Botanic Gardens, Glasnevin (erection of new workshops), A. P. Watkinson, Dublin. Curry National School, Co. Sligo (enlargement of school), M. J. Dunleavy Bros., Charlestown, Co. Mayo. Kilala National School, Co. Mayo (erection of school), M. Birmingham, Ardnagall, Milltown. Pulathomas National School, Co. Mayo (enlarging of school), J. Dempsey, Belmullet. Schull ex-Constguard Station, Co. Cork (partial reconstruction), P. Arundel, Schull. 45, Upper Sackville-street, Dublin (erection of front section), G. W. Scott & Co., Ltd., Dublin.

Kennethmont.—Reconstruction of the cottage at Law, Kennethmont, for Mr. J. Lippe. Messrs. T. Scott Sutherland & Taylor, chartered architects and surveyors, 9, The Square, Huntly. Quantities by the architects:—

Mason—
*W. Proctor, Wardhouse-Insch.
Carpenter—
*A. Shewan, Huntly.
Slater and Plumber—
*W. Duncan, Huntly.
Plasterer—
*R. Murdoch, Inverurie.
Painters—
*R. Mitchell & Son, Huntly.

Kilmarnock.—Reconstruction of the footbridge over the Kilmarnock water between Sandbed-street and Nelson-street, to replace the existing bridge, for the T.C. Mr. William Dunbar, Burgh Surveyor:—

*Kelvin Construction Co., Ltd., Glasgow	£141 2 6

Landport.—Houses for the R.D.C.

Kingsbury Episcopi (Stembridge) (four)—
*Ralph Fry | £380 each
East Lambrook (four)—
*Ralph Fry | £380 each
Barrington (four)—
*W. M. Palmer, Burrowbridge | £390 each

Leeds.—Vicarage at York-road. Messrs. Chorley, Gribbon & Foggitt, architects:—

*Saml. Flockton.	

London.—Laying of terrazzo flooring at the Institution, Plumstead High-street, S.E.18, for the Woolwich Union. Messrs. Whincop & Channer, architects, 47, Thomas-street, Woolwich:—

Stephens & Son, Woolwich	£299 10
Wm. Harris, Ltd., North Woolwich	250 0
Mongiats & Son, Brockley	227 10
*Wm. Mills & Sons, East Greenwich	219 0

London.—Additional office accommodation at the Town Hall, for the Kensington B.C.:—

*B. Colley & Sons, Ltd.	£510

London.—Erection of the first section of the nurses' home, for the Fulham B.G. Messrs. A. Saxon Snell & Phillips, architects:—

*Prestige & Co., Ltd.	£28,811

Maldon.—For *(a)* 12 dwellings off Colchester Road, Heybridge, and *(b)* 8 near The Compasses, Great Totham, for the R.D.C. Mr. W. Almond, surveyors:—

(a)
*T. H. R. Belchem, Kelvedon | **£4,557 10 10**
(b)
*C. T. Aylym, w Bishops Witham | 2,690 19 3
(Approved subject to approval of M.H.)

Manchester.—Conversion of premises at 92, Portland-street into shops and office premises, for Messrs. W. H. Robinson & Co., 12, Tib-lane:—

*H. Waterfield, Salford.
Steelwork—
*C. C. Dunkerley & Co., Ltd., Manchester.

March.—Shedding, also show-yard fittings, for the show of Cambs and Isle of Ely Agricultural Society. Mr. L. J. Chater, secretary, 23, St. Andrew's-street, Cambridge:—

*Foster & Sons, Wisbech.	

Mitcham.—Alterations to the laundry and disinfecting station at Isolation Hospital, Beddington Corner, for the Wandle Valley Joint Hospital Board. Messrs. Chart, Son & Reading, architects, Union Bank-chambers, Croydon:—

S. Dale	£6,975
R. Mansell	6,700
Burges & Son, Ltd.	6,498
Akers & Co., Ltd.	6,491
H. Hann	6,397
Bacon & Son, Ltd.	6,291
E. H. Smith	5,780
†C. H. Gibson, Ltd.	5,710

(All of London.)

Newport, Isle of Wight.—Erection of a bank, for the Westminster Bank, Ltd. Mr. J. W. S. Burmester, F.R.I.B.A., architect, 13, Queen Anne's-gate, Westminster, S.W.1 :—

Day & Sons, Ltd.	£12,345
G. F. Quinton	11,887
D. Day & Sons	11,390
F. J. Privett	10,326
*J. Rousell & Son	9,890

Northallerton.—Erection of the Church House :—

*Wilson & Willoughby £2,503

Preston.—Extensions to the garage at Eaves-lane, Chorley, for the Ribble Motor Services, Ltd., Frenchwood-avenue, Preston :—

*T. Croft & Sons, Ltd., Preston.

Pudsey (Yorks).—Public baths, for the T.C. :—

‡W. J. Kendall & Co.

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Rathdrum.—New convent at the County Home, Rathdrum :—

J. O'Toole, Arklow	£4,878
P. J. Payne, Dublin	4,769
*P. F. Fearon & Co., Ranelagh	4,190
J. Brennan & Sons, Dublin	3,963

Redruth.—For (a) redecoration of portion of the West Cornwall Miners' and Women's Hospital, and (b) X-Ray Room, Dark Room, etc., for Committee. Mr. L. Winn, L.R.I.B.A., chartered architect :—

(a) *J. E. James, Redruth.
(b) *W. T. Hart & Sons, Redruth.

Salford.—Additions to the works of the Greengate & Irwell Rubber Co., Ltd., Greengate Works :—

*J. Gerrard & Sons, Ltd., Swinton.

Steelwork—
*Redpath, Brown & Co., Ltd., Manchester.

Sheffield.—Internal and external painters' work at: (1) Corporation-street baths, (2) Heeley baths, for the T.C. Mr. W. Geo. Davies, F.R.I.B.A., City Architect :—

*Flint Bros., Sheffield.

Sheffield.—Church at Banner Cross United Methodist Church. Mr. J. W. Hale, F.R.I.B.A., architect, 15, St. James-row :—

*W. Marlow & Sons, Ltd., Sheffield.

Shipley.—Premises for the Airedale Combing Co. Messrs. Moore & Crabtree, architects, Queensgate, Bradford.

Masons—
*Chas. Booth & Sons, Lidgett Green.
Joiners—
*E. Briggs & Sons, Queensberry.

Shotton.—Central school at Shotton, for the Flintshire E.C. :—

‡J. T. Humphreys, Ltd., Acrefair.

Southampton.—New schools for St. Edmunds, The Avenue, for the Rev. D. O'Mahoney. Mr. W. C. Mangan, architect, 18, Guildhall-street, Preston :—

*Jenkins & Sons, Ltd., Southampton.

Stoke-on-Trent.—198 houses on the Stoke Lodge site, Trent Vale, Stoke-on-Trent, for the Sutton Dwelling Trust. Mr. A. R. Scrivener, architect, Howard Place, Hanley :—

*Drabble Bros., Sheffield £78,082 0 0

Swansea.—16 type "B" houses at Pontlliw, for the R.D.C. Mr. J. Teifion J. Williams, L.R.I.B.A., architect, 3, Temple-buildings, Goat-street :—

*Evans, Jones & Evans, Pyle £6,576

Swansea.—Installation of electric light at the new Llansamlet Council school, for the E.C. :—

*C. Jones, Pontardawe, ... £255

Watchet.—12 houses, for the U.D.C. Mr. W. J. Tamblyn, architect, Minehead :—

	Per house.
Six Non-parlour Houses—	
*Williams & Bowden, Watchet	£347 0
Six Parlour Houses—	
*Chidgey & Morse, Watchet	372 10

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Weymouth.—Steel bridge, for the Harbour Commissioners :—

*Cleveland Bridge & Engineering Co., Darlington £25,000

Whitehaven.—Additions to Nos. 16, 17 and 18, George-street, for Mrs. Burnyeat, of Whitehaven. Messrs. R. Bentley & Son, chartered architects :—

Leslie Bros.	£246 8 9
A. Jenkinson	207 11 0
D. Anderson	174 6 9
* J. Glaister	103 6 6

(All of Whitehaven.)

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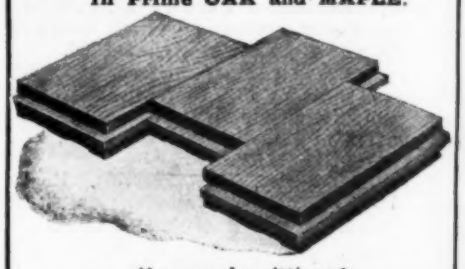
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